Chapter 13
Visual Impact Assessment
13.0 Visual Impact Assessment

13.1 Introduction

A detailed Visual Impact Assessment was undertaken as part of the study in order to determine the existing visual and landscape values of the study area as well as the potential for impacts on these values. The results of these investigations are reported in Technical Paper 7, in Volume 2 of the Draft Assessment Report. A summary of the findings of Technical Paper 7 are provided below.

The visual impact assessment has quantitatively and qualitatively assessed the preferred alignment of the proposed Southern Freight Rail Corridor (SFRC), which passes through predominantly rural and natural landscapes, some of which is considered to be of high scenic amenity.

Factors of particular relevance to the potential landscape and visual impact are:
- overhead electrical lines will not be required;
- a typical train may contain double-stacked containers. For the purpose of the assessment these will be approximately 6.2 metres high;
- standard QR rural fencing is likely to be used to fence public footpaths; and
- no consideration has been made of visual impact of noise walls in this assessment as Technical Paper 8 – Noise and Vibration concluded that noise walls are generally unsuitable as a mitigation option for this project.

The visual impact assessment describes what will be affected (i.e. the level of landscape/visual modification), and makes a judgement regarding the capacity of the landscape to accommodate change by assigning a landscape/visual sensitivity and then assessing the significance of the resulting impact. The landscape and visual assessment is based upon the following:
- Desk Study: Contextual assessment of the landscape and proposals based on published material including cadastral and tourist maps, air photographs, planning documents, concept plans for the SFRC as well as a desk-based computer analysis of the viewsheds (Zone of Visual Influence (ZVI) study); and
- Field Study: Daytime visits to the area to identify representative viewpoints, where potential views to the proposal are obtained, and photographic recording of potential assessment viewpoints.

Although there are no recognised standards for determining the significance of visual impact, there is a need to assign significance to this assessment so that there can be a clear and consistent method of evaluating visual impact. The significance criteria set out in Table 23 have been developed to allow for this consistency to be realised.

Table 23 Criteria for Significance of Visual Impact

<table>
<thead>
<tr>
<th>Visual modification</th>
<th>Visual Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National sensitivity</td>
</tr>
<tr>
<td>Considerable reduction</td>
<td>Major Adverse</td>
</tr>
<tr>
<td>Noticeable reduction</td>
<td>Major Adverse</td>
</tr>
<tr>
<td>No perceived reduction or improvement</td>
<td>Negligible</td>
</tr>
<tr>
<td>Noticeable improvement</td>
<td>Major Beneficial</td>
</tr>
</tbody>
</table>
### Description of Environmental Values

#### 13.2.1 Existing Landscape Character

The study area and Corridor of Interest have a highly variable scenic amenity, ranging from the lowest value of one to the highest value of ten. There is a strong correlation between scenic amenity and the level of development or clearing that has occurred in the area. The areas of lowest scenic amenity value are those related to infrastructure, industry and quarrying activities (e.g. Willowbank industrial area has a rating of one, the powerlines are rated as two and Purga quarry one). The areas of highest scenic amenity are the elevated, forested areas (e.g. Mount Walker and Mount Flinders). The lowland farmland typically ranges between five and seven.

The variation in the character of the landscape through which the SFRC would pass has been determined by a landscape character assessment. This assessment categorised the study area into six landscape types and fifteen landscape character zones (see Figure Two from Technical Paper 7). The landscape types include scenic wooded and undulating “upland ranges” and “bushland ridges”, peaceful farmed landscapes of the lowland “settled pastures” and “watercourses with croplands”, fringes of “industrial” areas and “settled landscapes”.

Ten of the fifteen Character Zones defined are traversed by the Corridor of Interest used in the baseline assessment and are affected by the preferred alignment. The visual impact assessment predicted areas of the following character zones will be significantly affected by the preferred alignment:

- WC 2: Bremer River Watercourse with Cropland;
- WC 3: Warrill Creek Watercourse with Cropland;
- WC 4: Purga Creek Watercourse with Cropland;
- UR 1: Flinders Perry Upland Ranges; and
- WC 5: Logan River Watercourse with Cropland.

#### 13.2.2 Predicted Future Changes to the Existing Landscape

Landscape is not static and it is predicted in SEQ, the fastest growing region in Australia, that changes will occur. The predicted trends for the landscape of the study area are dependent upon the possible future changes to the existing baseline conditions. Overall it is anticipated that the southern part of the study area’s landscape framework will undergo significant character changes in accordance with current planning considerations. In the northern portions of the study area, in the vicinity of Ipswich City urban fringe, major changes in landscape character are anticipated, primarily due to the urban development of the Ebenezer Major Development Area (MDA) by 2026.

Other changes in the southern, rural landscape may include intensification of agriculture and conversion of pastoral farm land to cropping and equine industries (horse-based rural economies). The urban footprints of small settlements such as Peak Crossing may extend and additional pressure to extend mineral extraction particularly around the existing quarries and coal mines may occur.

In addition, the Boonah to Ipswich multi user recreation trail is proposed as a part of the Active Trails: A Strategy for Regional Trails in South East Queensland (2007) (SEQRTS). The concept proposes a 76 kilometre trail from Boonah to Ipswich which will pass through Flinders – Perry upland area taking in Flinders Peak and crossing the Teviot Brook / Wild Pig Creek.

#### 13.2.3 Stakeholder Input and Observations

To date, community engagement has identified visual and scenic amenity as the seventh most important stakeholder issue. Specifically it could be said that visual and scenic amenity is an important consideration with most residents. The majority of residents have indicated that a rail line...
would affect negatively on the rural environment. Many noted that the rural lifestyle was a significant factor in their choice of where to live.

Landscape and Visual integration of the SFRC into the rural landscape is therefore key to alleviate community concerns. Ways of integrating the rail corridor so that it does not stick out as an “eyesore” or cause “visual pollution” are considered in the mitigation measures.

13.3 Potential Impacts and Mitigation Measures

The visual impact assessment identified a number of representative viewpoints based on the GIS analysis and field investigation. Most viewpoints are located close to the preferred alignment as the flat nature of much of the landscape and/or presence of vegetation limits the potential for longer-range views, particularly to the west of the study area (see Figure Six from Technical Paper 7). The detailed assessment reveals that the sensitivity of these viewpoints is usually fairly low (i.e. of local or less than local sensitivity). Only the Flinders Peak viewpoint is considered to be of regional sensitivity, and the future Boonah to Ipswich multi user recreation trail, potentially of state level sensitivity.

The viewpoints were selected to represent the “worst case” where clear views of the preferred alignment could potentially be obtained. As a result half of the viewpoints assessed are likely to experience “considerable” visual changes in the view. This is in part due to the fact that no railway currently exists in these views, but also because the scheme requires extensive and intrusive earthworks in some areas. These earthworks are particularly associated with river or road crossings and to contend with the challenging terrain in the eastern part of the study area. In addition some of these views are of landscapes characterised by an inherently remote, open, flat and / or scenic character. Others contain visual detractors such as overhead power lines and quarries. Overall the assessment identified visual impacts ranging in significance from negligible to moderate adverse. Table 24 summaries the findings of the visual impact assessment.

Table 24 Assessment of Significance of Impact on Viewpoints

<table>
<thead>
<tr>
<th>Viewpoint</th>
<th>Landscape Character Zone</th>
<th>Sensitivity to Change</th>
<th>Likely Magnitude of Impact (Daytime)</th>
<th>Significance of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lane Road, looking south-west</td>
<td>WC 1</td>
<td>Less than local</td>
<td>Noticeable</td>
<td>Negligible</td>
</tr>
<tr>
<td>2. Rosewood-Aratula Road, looking south</td>
<td>WC 2</td>
<td>Local</td>
<td>Considerable</td>
<td>Moderate adverse</td>
</tr>
<tr>
<td>3. Mount Forbes Road, looking south</td>
<td>BR 1</td>
<td>Less than local</td>
<td>Noticeable</td>
<td>Negligible – Minor adverse</td>
</tr>
<tr>
<td>4. Cunningham Highway, looking north</td>
<td>WC 3</td>
<td>Local</td>
<td>Considerable</td>
<td>Moderate adverse</td>
</tr>
<tr>
<td>5. Middle Road looking north-east</td>
<td>SP 3</td>
<td>Less than local</td>
<td>Noticeable</td>
<td>Negligible</td>
</tr>
<tr>
<td>6. Ipswich-Boonah Road looking south</td>
<td>WC 4</td>
<td>Local</td>
<td>Considerable</td>
<td>Moderate adverse</td>
</tr>
<tr>
<td>7. Junction of Mount Flinders Road and Ipswich-Boonah Road, looking east</td>
<td>WC 4</td>
<td>Local</td>
<td>Noticeable</td>
<td>Minor adverse</td>
</tr>
</tbody>
</table>
Overall the assessment identified a range of visual impact significance from negligible to moderate adverse. The most significant adverse impacts were found at the following viewpoints:

- Rosewood-Aratula Road crossing (viewpoint 2);
- Cunningham Highway crossing (viewpoint 4);
- Ipswich-Boonah Road crossing (viewpoint 6);
- Flinders Peak (viewpoint 10); and
- 967 Undullah Road (viewpoint 15) and Undullah Road Bridge (viewpoint 16).

The assessment shows a correlation between the greatest level of visual and landscape change / modification and the high level of visual impact. Generally the views with the highest impact are in close locations where the greatest visual change is predicted, with the exception of the view from Flinders Peak (viewpoint 10) (see Figure 40). The four close viewpoints of moderate adverse significance are in locations where larger numbers of viewers are anticipated, where extensive earthworks will be required and where road or highway crossings require grade separation.
Overall it is considered that the landscape and visual impact of the preferred alignment is of minor to moderate adverse significance. Opportunities to address these adverse impacts have been identified and should be integrated into later detailed design work. These mitigation measures include, but are not limited to:

- careful design and grading of railway embankments, cuttings and earthworks;
- selective planting of the SFRC and adjoining areas that are compatible with the wider landscape character;
- minimisation of associated rail infrastructure and, where this is unavoidable, sensitive design of all infrastructure elements, such as bridges, fences etc.; and
- measures during construction to minimise the intrusion of structures into the natural and rural landscape of the study area.

The future Boonah to Ipswich multi user recreation trail will come in close proximity to the SFRC, crossing and interfacing directly with it. The predicted future viewers are considered to be a sensitive viewer group of regional and potentially state importance given the viewers will be using the trail principally for landscape appreciation. Ultimately future trail crossing points over the preferred alignment need to be provided, however this landscape and visual assessment highlights the requirement for the SFRC to be subtly integrated into the landscape. This can be achieved through engineering, landscape and urban design and screening from the trail where possible, particularly in the Wild Pig Creek locality where public access is not currently achieved.

It is recommended that further collaborative work is required, to ensure the goals and aims of both the SFRC and recreation trail are achieved, between the stakeholders involved with the SFRC and the proposed regional trail, (for example Queensland Transport and the Department of Planning and Infrastructure (QLD), the Scenic Rim Regional Council and the Queensland Outdoor Recreation Federation).
13.4 Conclusion

Some landscape and visual impacts have been partially mitigated in the current engineering proposal of the preferred alignment. For example the incorporation of two tunnels through areas of high scenic visual amenity in the eastern part of the corridor has assisted in minimising the visual (and intrinsically linked landscape) impact of the preferred alignment.

Additional opportunities to address adverse impacts of the preferred alignment have been identified in this assessment and should be integrated into the engineering design, a further Landscape Integration Strategy and at the detailed design into Landscape, Revegetation and Urban Design Guidelines. These mitigation measures aim to maximise visual quality through the establishment of aesthetically pleasing form and alignment, as well as the integration of the SFRC into the landscape. They include, but are not limited to:

- careful design and grading of railway embankments and earthworks particularly in the flat landscapes. Where possible, the earthworks should reflect the natural landform (for example, where the landscape is characterised by steeper, more pronounced undulating landforms, use steeper, varied profiles, whilst in flat landscapes create more irregular and gentler profiles, augmented with vegetation to break up the visual mass) of the introduced earthworks;
- selective planting of the SFRC and adjoining areas where possible that is compatible with wider landscape character (for example, use of linear plantings along waterways and property boundaries and field boundaries);
- minimisation of associated rail infrastructure and construction works area to the greatest extent possible. Where vegetation has to be removed compensatory planting measures should be provided; and
- sensitive design of all infrastructure elements such as bridges, fences and noise walls and measures during construction and eventual operation to minimise the intrusion of these structures into the natural and rural landscape of the study area. For example, development of a design suite that can be applied to the entire corridor and adopts the rural character already found in the local area.

Implementation of these measures would ensure that the SFRC is integrated into the landscapes of Ipswich City and Scenic Rim Regional Councils with minimal landscape and visual impact.
Watercourse with Cropland
WC1. Western Creek
WC2. Bremer River
WC3. Warrill Creek
WC4. Purga Creek
WC5. Logan River
WC6. Bundamba Creek

Settled Residential
SR1. Rosewood - Walloon
SR2. Ipswich
SR3. Redbank - Springfield - Flagstone

Industrial
I1. Amberley - Ebenezer

Bushland Ridges
BR1. Walker Forbes

Settled Pastures
SP1. Cottonvale
SP2. Rosevale
SP3. Peak Crossing

Upland Ranges
UR1. Flinders - Perry

Legend
- Cunningham Highway
- Existing Railway Line
- Creekline / Watercourse
- SFRC Preferred Alignment
- Watercourse with Cropland
- Settled Residential
- Industrial
- Bushland Ridges
- Upland Ranges
- Settled Pastures

Figure Two  Southern Freight Rail Corridor Study  Character Zones
Representative Viewpoints
1. Lane Road / Railway
2. Rosewood Aratula Road
3. Mount Forbes / Murrimo / Lairhopes Road
4. Cunningham Highway
5. Middle Road
6. Ipswich Boonah Road
7. Ipswich Boonah and Mount Flinders Road
8. Allens Road / Truloff Road
9. Washpool Road
10. Flinders Peak
11. Washpool Road
12. HERFAM Pty Ltd property
13. Woolooman Road
14. Wild Pig Creek Road
15. Undullah Road
16. Undullah Bridge

Topographic Features
- Mount Blaine
- Flinders Peak
- Mount Elliot
- Mount Welcome
- Mount Goolman
- Ivory's Rock
- Mount Perry

Legend
- Viewpoint
- Existing Railway Line
- Proposed SFRC Preferred Alignment
- Boonah to Ipswich multi user recreation trail

Figure Six  Southern Freight Rail Corridor Study  Representative Viewpoint Locations & Topographic Features  EDAW | AECOM