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**Mixed Use Development, Goulburn**

3
1. Introduction

1.1. Background

This report is meant to aid in assessing the bridge crossing proposed for the Murulla Street crossing of the Pages River. The site in question is located southwest of the intersection with the New England Highway in Murrurrundi. The proposal puts forward two options for the bridge; a low level crossing and a high level bridge. The site also contains an existing suspension footbridge that has heritage significance.

This visual impact assessment has been prepared to assess the visual impacts on the landscape and to recommend measures to minimise the visual impact of planned development. This report will consider each crossing option and its visual effects on the landscape as well as the visual effects on the historic footbridge.

The report describes the existing visual environment and provides a methodology to assess the visual sensitivity of the site and to assess the visual impact of the planned development. Viewing zones and significant viewing locations within each zone are identified and assessed.

1.2. The site and context

The site is located centrally to Murrurrundi, within the Upper Hunter Shire Council Local Government Area. It lies approximately 80m southwest of the New England Highway along Murulla Street.

The proposal is for a river crossing and therefore the site itself straddles the Pages River corridor. The corridor is lined with dense tree planting with dense under-storey planting along the river banks.

Northeast of the river is the New England Highway. At the intersection of the highway and Murulla Street is a service station, hotel, and two residential structures. Along the highway are clusters of commercial buildings. Beyond the highway (to the north) are residential communities consisting of single detached dwellings.

The southwest boundary of the river corridor is lined with single residential properties. The Police Station is located along Murulla Street southwest of the crossing location. Beyond that, the topography rises to the railroad corridor and keeps rising to peak at the town water reservoir.
Figure 1.1. Site location
The site is located in Murrurrundi where Murulla Road crosses the Page River
2. Methodology

2.1. Background

This section provides a methodology for the visual impact assessment. The methodology used in this assessment has been adapted from the Roads and Maritime Services Environmental Impact Assessment Guidance Note (2013): Guidelines for landscape character and visual impact assessment. This methodology has been used as a guide to align with the features and requirements of this Proposal.

The methodology for assessing the visual impact includes the following key processes:

- Section 2.2 identifies the existing visual environment, the significant landscape features of the site and the visibility of the site from the significant vantage points
- Section 2.3 provides an assessment criteria that describes site visibility and visual absorption capacity
- Section 2.4 identifies viewing zones from which the site could be visible from various distances within the immediate vicinity, local area and regional context
- Section 3 provides an overview of the proposed development
- Section 4 assesses the potential visual impact from a variety of viewing locations
- Section 5 recommended mitigation measures.

2.2. Existing visual environment

This section describes the character and visibility of the site from the surrounding area.

**Landscape character**

The site and area immediately surrounding it is within a river corridor with dense tree and under-storey plants. This section of the river corridor meanders northwest to southeast somewhat parallel to the New England Highway.

Outside of the corridor, is a mix of detached dwellings and sheds on residential lots.

**Site visibility**

The procedure for assessing site visibility involved:

- Determination of various viewing zones (regional, local and immediate vicinity)
- Detailed field investigations to plot those portions of the site that are visible from the various viewing zones.

*Figure 2.1: View of the river corridor*
2.3. Assessment criteria

The potential visual impact of planned development would result from the combination of two factors:

- Visibility of development
- Visual absorption capacity of the landscape in which the development occurs.

The visibility and the visual absorption capacity of the site for each representative view location have been assessed to determine the overall visual impact. Visibility and visual absorption capacity are defined below.

2.3.1. Visibility

“Visibility” is a measure of the extent to which particular activities/components of a proposal may be visible from surrounding areas, the relative number of viewers, the period of view, viewing distance and context of view. The rationale for the assessment is that if a proposal is not visible the impact is nil and if the number of people who would potentially see the proposal is low, then the visual impact would be lower than if a potential large number of people had the same view.

For the purpose of this study, the general categories of visibility have been defined broadly as:

- High (H) – where a large number of people would see new development at short distance over a short, moderate or long period of time
- Moderate (M) – where a small number of people would see new development at a short or medium distance over a moderate or long period of time, or a moderate
number of people would see the new development at a medium distance over a short, moderate or long period of time, or a large number of people would see it at a medium or long distance over a short period of time

- Low (L) – where a small number of people would see new development at long distance over a short (< 1 minute), moderate (< 1-10 minutes) or long (> 10 minutes) period of time.

The procedure for assessing site visibility involved:

- Determination of viewing locations from which parts of the planned development could potentially be visible (eg. by a motorist, visitor, resident)
- A field inspection to determine the extent of site visibility from the various viewing locations.

2.3.2. Visual absorption criteria

“Visual Absorption Capacity” is an estimation of the capacity of the landscape to absorb development without creating significant visual change. The capacity to absorb development is primarily dependent on land form, vegetation cover and the presence of other development.

The extent to which portions of the site can potentially absorb development without reducing the scenic quality of the area has been assessed under this criteria. Given the visual landscape character of the site this capacity is primarily dependent on repetition of built form and vegetation cover. The surrounding building and tree canopies provide capacity to visually absorb development without significantly changing its scenic quality provided vegetation is retained in public and private land.

The potential for development to significantly change the visual character or to reduce the scenic quality of the area will result from removal of portions of the tree cover and creation of visual contrast between development (buildings, roads and new landscape) and the existing landscape of surrounding areas.

The level of contrast is also strongly influenced by the nature of the backdrop against which development is viewed. In particular, structures that are viewed above the skyline will potentially create a higher degree of contrast that the same elements viewed against a backdrop of similar structures or a landscape of similar colour/textures as the building or structure.

The degree of contrast between proposed development and the existing landscape (buildings and vegetation) can be reduced by careful attention to the colour, scale, texture, and reflectivity of building materials and by avoiding development that breaks the height of the existing tree canopy. Where possible these considerations are to be incorporated into the design and siting of buildings, roads and other structures.
**Table 2.1**: Visual absorption criteria.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Existing landscape and built environment able to absorb development. Low degree of visual contrast.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Existing landscape able to absorb some development. Some visual contrast will result.</td>
</tr>
<tr>
<td>Low</td>
<td>Existing landscape unable to absorb development (unless the denser future character of an area is to deliberately make a development prominent such as a public building or special focus). High degree of visual contrast will result.</td>
</tr>
</tbody>
</table>

### 2.3.3. Visual Impact Rating

Table 2.2 provides a matrix that compares the visibility rating with the visual absorption capacity rating to determine the visual impact rating.

**Table 2.2**: Visual impact rating matrix

<table>
<thead>
<tr>
<th>Visual Absorption Capacity</th>
<th>Visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

### 2.4. Viewing zones

Viewing zones are areas outside the site that have potential views to the site from various distances within the immediate vicinity, local area and regional context.

The site of the proposed bridge is within the river corridor and therefore lower than the surrounding area. The dense vegetation along the corridor limits views of the proposed and existing pedestrian bridge. The only views of the bridges are therefore along Murulla Street itself. As the viewer moves away from the river, the land rises and views are cut off by the tree canopies.

In order to assess the potential visual impacts of the bridge development, viewing zones based on the distance from the proposed development were defined as follows:

- Immediate vicinity (< 1.5km)
- Local area (1.5km – 3km)
- Regional area (3km – 6km).

Representative view locations were selected from each zone and the visual impact of the planned development has been assessed from each location.

**Immediate vicinity (< 1.5km)**

- View 1: Corner of Murulla Street and New England Highway
- View 2: Murulla Street, near Haydon Street
- View 3: Murulla Street near Sunshine
- View 4: Corner of Murulla Street and Isis Lane
Local area (1.5km – 3km)
- There are no available views of the bridge from this distance

Regional area (3km – 6km)
- There are no available views of the bridge from this distance.

Each view is addressed separately in Section 4 of this report.

Figure 2.3: Viewing Zones
The viewing zones indicated as distance from the subject site. Figure 2.4 shows specific locations of each viewpoint that will be discussed in Section 4.
Figure 2.4: Viewing Locations
The view locations are shown with arrows. The number on the arrows are associated with the visual assessment in Section 4 of this report.
3. Proposal

3.1. Proposed Development

The existing ford crossing and pedestrian footbridge are shown below (Figure 3.1) for reference. The vehicular crossing floods regularly, which has prompted the development of a bridge to reduce or eliminate the need for closing the road. As such, The proposed development is for the construction of a bridge crossing for Murulla Street at the Pages River.

There are two proposed options for the crossing. The first is a low level crossing that will allow water to pass under it, but will be inundated and unusable during some flood events. Figure 3.2 illustrates a similar low level crossing that exists at Moonan Flat.

The second option is for a bridge that will allow vehicular traffic in most situations. Figure 3.3 shows a bridge similar to the one proposed along Murulla Street.

The low level crossing option consists of:

- Road widening to allow for two lanes of traffic
- Concrete causeway structure approximately 1m above the current ford level.
The bridge (high level) option consists of:

- Road widening to allow for two lanes of traffic approaching the bridge
- Concrete bridge structure at the same level as the existing footbridge
- Metal guard rails along the bridge
- Batters to tie the elevated road back into surrounding ground levels.

![Figure 3.2: Example of a causeway similar to the proposed causeway (Moonan Flat). Source: Google Street View](image)

![Figure 3.3: Example of a bridge similar to the proposed bridge. Source: Upper Hunter Shire Council](image)
4. Visual impact assessment

4.1. Viewpoint Analysis

This section of the visual assessment considers the likely impact that the proposed development may have on the views toward the site. This is done by identifying and selecting particular sites, referred to as viewpoints, conducting inspections and determining what part of the development will be visible from those viewpoints and the visual impact of that development proposal.

The viewpoints, as shown on Figure 2.4, were selected on the basis of where the development would appear to be most prominent either based on degree of exposure or the number of people likely to be affected. Sites were further selected on the basis of significant features, significant viewpoints and significant ridge lines.

The following viewpoint worksheets provide photographs and analysis data from each of the viewpoints. The images were taken using a digital camera with a focal length equal to a standard 50mm for a conventional 35mm camera. This focal length is widely accepted as closely approximating the vision of the human eye.

The outlines of the proposed bridge options have been superimposed over the photographs to illustrate the extents and massing of the structures. Because there are two options considered, this report will illustrate the low level crossing at each viewpoint, and then the high level crossing.

An additional element this assessment considers is the impact of the proposed bridge options on the historic footbridge. This rating has been included in each viewpoint analysis and in the summary comments.
Viewpoint 1 - Low Level Crossing

Viewing situation | Murulla Street looking at the proposed bridge  
Category of view | Immediate vicinity  
Context of view | From New England Highway  
Relative number of viewers | High  
Distance of view | 60m  
Likely period of view | Low (traffic) Long (residents and visitors to Hotel)  
Visibility | High  
Visual absorption capacity | Moderate  
Visual impact rating | High  
Visual impact on footbridge | Low

Description:
View from the Murulla Street near the New England Highway looking toward the site. The existing pedestrian bridge dominates the view.

Comments:
The proposed low level crossing will be visible from this viewpoint. However, it will not significantly change the view in relation to the existing structure.

The proposed crossing will not interfere visually with the existing pedestrian bridge from this viewpoint.
Viewpoint 2 - Low Level Crossing

Description:
View from Murulla Street (near Haydon Street). Viewer is above the site looking down at the river corridor.

Comments:
From this viewpoint, the entire proposed crossing is visible. It will not appear significantly different to the existing crossing, however the widening of the road will appear significant.

The low level crossing structure will not significantly alter the view of the footbridge from this viewpoint.
Viewpoint 3 - Low Level Crossing

Viewing situation: On Murulla Street looking down to the site.
Category of view: Immediate vicinity
Context of view: Local residents and their visitors
Relative number of viewers: Low
Distance of view: 300m
Likely period of view: Short
Visibility: Low
Visual absorption capacity: Medium
Visual impact rating: Low
Visual impact on footbridge: Low

Description:
View from Murulla Street. This viewpoint is elevated above the site, but views to the crossing are through tree canopies and over the rail tracks.

Comments:
The views from this location to the crossing are screened. From this view, only the colour of the development will set it apart from the roadway.
Viewpoint 4 - Low Level Crossing

<table>
<thead>
<tr>
<th>Viewing situation</th>
<th>Murulla Street looking across the New England Highway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category of view</td>
<td>Immediate vicinity</td>
</tr>
<tr>
<td>Context of view</td>
<td>Local residents and their visitors</td>
</tr>
<tr>
<td>Relative number of viewers</td>
<td>Moderate</td>
</tr>
<tr>
<td>Distance of view</td>
<td>460m</td>
</tr>
<tr>
<td>Likely period of view</td>
<td>Short (from vehicles) Long (from residences)</td>
</tr>
<tr>
<td>Visibility</td>
<td>Low</td>
</tr>
<tr>
<td>Visual absorption capacity</td>
<td>Medium</td>
</tr>
<tr>
<td>Visual impact rating</td>
<td>Low</td>
</tr>
<tr>
<td>Visual impact on footbridge</td>
<td>Low</td>
</tr>
</tbody>
</table>

Description:
View from Murulla Street. Viewer is above the site looking down and across the New England Highway into the site. The low level crossing is not visible from this viewpoint.

Comments:
The views from this location are restricted to residents and their visitors. The proposed crossing will be located below the site line and therefore not visible from here.
### Viewpoint 1 - Bridge Crossing

**Viewing situation**
Murulla Street looking at the proposed bridge

**Category of view**
Immediate vicinity

**Context of view**
From New England Highway

**Relative number of viewers**
High

**Distance of view**
60m

**Likely period of view**
Low (traffic) Long (residents and visitors to Hotel)

**Visibility**
High

**Visual absorption capacity**
Low

**Visual impact rating**
High

**Visual impact on footbridge**
High

**Description:**
View from the Murulla Street near the New England Highway looking toward the site. The proposed bridge will dominate the views with the new railing interfering with the existing pedestrian bridge.

**Comments:**
The proposed bridge will be visible from this viewpoint. The widening of the road and the railing along the bridge will significantly alter the visual character of the landscape.

The proposed crossing will also interfere visually with the existing pedestrian bridge.
Viewpoint 2 - Bridge Crossing

Viewing situation: Murulla Street looking down at the proposed bridge.
Category of view: Immediate vicinity
Context of view: Local residents in vehicles
Relative number of viewers: Low
Distance of view: 180m
 Likely period of view: Low
Visibility: Moderate
Visual absorption capacity: Medium
Visual impact rating: Moderate
Visual impact on footbridge: High

Description:
View from Murulla Street (near Haydon Street). Viewer is above the site looking down at the river corridor.

Comments:
From this viewpoint, the entire proposed bridge is visible. The road will be raised to the footbridge level. Even though it will not screen the footbridge, the higher road will significantly alter the relationship between the footbridge and the roadway.
Viewpoint 3 - Bridge Crossing

Description:
View from Murulla Street. This viewpoint is elevated above the site, but views to the crossing are through tree canopies and over the rail tracks.

Comments:
The views from this location to the crossing are screened. From this view, it will be difficult to see any changes that are made.
### Viewpoint 4 - Bridge Crossing

| Description: | View from Murulla Street. Viewer is above the site looking down and across the New England Highway into the site. |
| Comments: | The views from this location are restricted to residents and their visitors. The proposed bridge railing will be visible along Murulla Street. |

<table>
<thead>
<tr>
<th>Viewing situation</th>
<th>Murulla Street looking across the New England Highway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category of view</td>
<td>Immediate vicinity</td>
</tr>
<tr>
<td>Context of view</td>
<td>Local residents and their visitors</td>
</tr>
<tr>
<td>Relative number of viewers</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Likely period of view</td>
<td>Short (from vehicles) Long (from residences)</td>
</tr>
<tr>
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<td>Low</td>
</tr>
<tr>
<td>Visual absorption capacity</td>
<td>Medium</td>
</tr>
<tr>
<td>Visual impact rating</td>
<td>Low</td>
</tr>
<tr>
<td>Visual impact on footbridge</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
4.2. Visual impact assessment summary

This section of the report summarises the findings of the visual impact assessment of views in the immediate vicinity, local views and regional views of the site.

4.2.1. Views from the immediate vicinity (< 1.5km)

The proposed development is likely to have a moderate visual impact from locations near the site and on Murulla Street. Between the New England Highway and Haydon Street the bridge will be plainly visible. However, the low level crossing will not impose a structure that is significantly different from the existing ford, albeit a meter higher.

The proposed bridge (high level) will have a significant visual impact from locations on Murulla Street between Haydon Street and Isis Lane. Beyond that, it is unlikely that the bridge will be visible at all.

Impacts of the low level crossing on the historic footbridge

The low level crossing will have a low visual impact on the footbridge. This is due to the causeway being located low within the river corridor where it will not compete with the footbridge visually.

The noticeable impact will be the widening of the roadway to formalise the two lanes required. This change will only be noticed initially and by locals who frequently use the road. Very quickly, the widened road will normalise in the user’s perception and will cease to be noticed.

The low level bridge will remain in the river corridor and not be visible from high-use areas like the New England Highway. Since this type of bridge will not alter the landscape significantly, it remains a low visual impact.

Impacts of the bridge crossing on the historic footbridge

The bridge option will have more of a visual impact on the footbridge than the low level crossing. The main reason for this is that the bridge will raise the level of the road to the same level as the footbridge. This may not seem significant, but the experience of moving down into the river corridor, below the footbridge, and looking up to see the footbridge is inspiring. Similarly, walking across the footbridge with the landscape below is a unique experience only found on that footbridge. These experiences will be lost with the construction of a new vehicular bridge located adjacent to, and at the same level as the footbridge.

Secondly, the guard rail on the bridge will partially obscure the footbridge. This can be minimised when viewed from the New England Highway intersection. However, when driving over the bridge, the footbridge will always be experienced through the screen of the rail.
4.2.2. Local views (1.5 – 3km)

There are no locations where the site is visible from this distance.

4.2.3. Regional Views (3 – 6km)

There are no locations where the site is visible from this distance.
5. Visual impact mitigation measures

5.1. Recommendations

The visual impact assessment in Section 4 of this report assigns either a high, medium or low visual impact rating when viewed from the immediate vicinity, local views and regional views. The following mitigation measures should be considered in the design and assessment of the bridge.

Visual character

The charm and impact that the historic bridge offers is partly due to its position in the landscape. It is on a rise with the river bank falling away from it. The tall timber elements enhance this and also attracts the viewer’s eye. To maintain this character, the following recommendations are suggested.

- The use of materials sympathetic to the historic structure
- Keep the new construction from screening / obscuring the historic structure
- Position any new construction so the historic footbridge maintains its visual dominance.