BA TEMANS BA Y BRIDGE REPLACEMENT
URBAN DESIGN REPORT AND LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT
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<table>
<thead>
<tr>
<th>Issue</th>
<th>Date of Issue</th>
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</thead>
<tbody>
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<td>80% Concept Design - Draft Report</td>
<td>MW</td>
<td>JvG</td>
</tr>
</tbody>
</table>
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01</strong> INTRODUCTION/ BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>1.1 BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>1.2 THE PROJECT OBJECTIVES</td>
<td>1</td>
</tr>
<tr>
<td>1.3 PURPOSE OF THIS REPORT</td>
<td>1</td>
</tr>
<tr>
<td>1.4 METHODOLOGY</td>
<td>1</td>
</tr>
<tr>
<td>1.5 ROADS AND MARITIME DESIGN GUIDELINES</td>
<td>2</td>
</tr>
<tr>
<td><strong>02</strong> CONTEXTUAL ANALYSIS</td>
<td>3</td>
</tr>
<tr>
<td>2.1 LANDSCAPE CONTEXT</td>
<td>3</td>
</tr>
<tr>
<td>2.2 THE BRIDGE</td>
<td>5</td>
</tr>
<tr>
<td>2.3 THE SETTING</td>
<td>6</td>
</tr>
<tr>
<td>2.4 LAND USE</td>
<td>8</td>
</tr>
<tr>
<td>2.5 HERITAGE</td>
<td>9</td>
</tr>
<tr>
<td>2.6 LOCAL PLANNING</td>
<td>12</td>
</tr>
<tr>
<td><strong>03</strong> LANDSCAPE CHARACTER ANALYSIS</td>
<td>14</td>
</tr>
<tr>
<td>3.1 LANDSCAPE CHARACTER ZONES</td>
<td>14</td>
</tr>
<tr>
<td><strong>04</strong> URBAN DESIGN VISION, OBJECTIVES AND PRINCIPLES</td>
<td>27</td>
</tr>
<tr>
<td>4.1 VISION</td>
<td>27</td>
</tr>
<tr>
<td>4.2 URBAN DESIGN OBJECTIVES</td>
<td>28</td>
</tr>
<tr>
<td>4.3 URBAN DESIGN PRINCIPLES</td>
<td>31</td>
</tr>
<tr>
<td><strong>05</strong> BRIDGE GEOMETRY AND CONSIDERATION OF OPTIONS</td>
<td>33</td>
</tr>
<tr>
<td>5.1 DECK GEOMETRY</td>
<td>33</td>
</tr>
<tr>
<td>5.2 CONSIDERATION OF ALIGNMENT OPTIONS</td>
<td>34</td>
</tr>
<tr>
<td>5.3 CONSIDERATION OF PIER OPTIONS</td>
<td>37</td>
</tr>
<tr>
<td><strong>06</strong> PREFERRED OPTION</td>
<td>41</td>
</tr>
<tr>
<td>6.1 THE BRIDGE</td>
<td>41</td>
</tr>
<tr>
<td>6.2 THE NORTHERN APPROACH</td>
<td>46</td>
</tr>
<tr>
<td>6.3 THE SOUTHERN APPROACH</td>
<td>48</td>
</tr>
<tr>
<td>6.4 LANDSCAPE DESIGN - PLANTING STRATEGIES</td>
<td>50</td>
</tr>
<tr>
<td><strong>07</strong> LANDSCAPE CHARACTER IMPACT ASSESSMENT</td>
<td>55</td>
</tr>
<tr>
<td><strong>08</strong> VISUAL IMPACT</td>
<td>59</td>
</tr>
<tr>
<td>8.1 VISUAL ENVELOPE</td>
<td>59</td>
</tr>
<tr>
<td>8.2 SUMMARY OF VISUAL IMPACTS</td>
<td>70</td>
</tr>
<tr>
<td>8.3 MITIGATION STRATEGIES</td>
<td>71</td>
</tr>
<tr>
<td><strong>09</strong> SUMMARY</td>
<td>71</td>
</tr>
</tbody>
</table>
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Tozer, M, Turner, K, Simpson, C, Keith, D, Beukers, P, MacKenzie, B, Tindall, D and Penney, C (2010), Native Vegetation of South-east NSW: A Revised Classification and Map for the Coast and Eastern Tablelands. Prepared for the NSW Department of Environment and Conservation and the NSW Department of Natural Resources
1.0 INTRODUCTION

1.1 BACKGROUND

Roads and Maritime Services (Roads and Maritime) proposes to upgrade the existing bridge over the Clyde River on the Princes Highway at Batemans Bay. A Preliminary Environmental Investigation (PEI) was completed in April 2016. Subsequently, a strategic urban design study was prepared to provide urban design advice in the selection of preferred new bridge options and to develop a strategic design to fit sensitively into the landscape, the built, heritage and community environment, and to contribute to the accessibility and connectivity of the area, and the overall quality of the public domain for the community and bridge users.

The bridge over the Clyde River at Batemans Bay has been identified as the only bridge on the Princes Highway between Yallah and Eden which is deficient for HML vehicle access and was identified as requiring maintenance to improve its condition.

The potential benefits of replacing the Batemans Bay Bridge include:

- Improved freight access by removing the constraint to HML semi-trailers and B-double vehicles up to 26 metres at Batemans Bay
- Removing the 5.1 metre constraint to over height vehicles
- Addressing bridge elements which are currently in poor condition and reducing ongoing maintenance costs
- Providing a reliable connection for all road users to essential services and minimising economic and social impacts resulting from an extended road closure or reduced capacity
- Improving journey reliability and reduce traffic delays between Berrima Parade and Beach Road by accommodating for future traffic growth and carrying out corridor and intersection improvements
- Improving safety by increasing the width of the bridge and upgrading traffic barriers
- Providing improved access on the Clyde River for water craft.

1.2 THE PROJECT OBJECTIVES

The fundamental project objective is to replace the existing bridge over the Clyde River on the Princes Highway at Batemans Bay and the primary project objectives are to:

- Achieve current Australian Standard 5100 design loading (i.e. SM1600 loading) to remove a constraint to HML semi-trailers and HML 19 m, 23 m, 25 m and 26 m B-doubles from crossing the Clyde River
- Address the poor bridge condition and reduce the ongoing maintenance costs of the bridge
- Reduce the risk of loss of access for Batemans Bay residents and the wider travelling public across the Clyde River as a result of the lift span operation, bridge condition or accidental damage
- Provide efficiency and consistency of traffic flow to manage journey reliability on the Princes Highway between Berrima Parade and Beach Road.

1.3 PURPOSE AND STRUCTURE OF THIS REPORT

This Urban Design Concept Report (Including Landscape Character and Visual Impact Assessment) has been prepared as part of the environmental assessment for the proposed bridge replacement (the proposal). This document is a technical paper that supports the environmental assessment being prepared by Aurecon.

The report includes:

- An initial description of the existing situation
- A description of the proposal and its impact
- Urban design principles and mitigation measures to be adopted should the project proceed.

The report structure is as follows:

Chapter 1: Introduction and project background
Chapter 2: Contextual analysis
Chapter 3: Landscape character analysis
Chapter 4: Urban design vision, objectives and principles
Chapter 5: Bridge geometry and consideration of options
Chapter 6: Preferred option
Chapter 7: Landscape character assessment
Chapter 8: Visual impact assessment
Chapter 9: Conclusion

The urban design input aims to facilitate an integrated design outcome that responds to engineering and urban design requirements and identifies opportunities and issues within the study area.
1.4 METHODOLOGY

Preparation of this report has involved a desktop analysis and site visits. The methodology used to undertake the study is summarised as follows:

• Background review of the strategic concept design and supporting material to gain an appreciation of the project
• Detailed site visit to identify sensitivities, views, visual catchments, magnitude of change, and to gain a full appreciation of the interface of the proposed bridge in its setting
• Contextual analysis evaluating the characteristics of the site including land uses, scenic values, character zones, heritage and landform
• Determination of sensitivity levels based on the contextual analysis
• Formulation of a project vision and identification of key urban design objectives and principles
• Identification of key constraints and opportunities and development of initial ideas in collaboration with the design team
• Development of a concept strategic design plan that outlines key urban design strategies
• In collaboration with the project team, iterative identification of strategies that would improve the outcome of the project from an urban design, landscape character and visual impact point of view
• Description of the design based on the urban design input and mitigation strategies
• Evaluation of the project’s impact on the landscape character
• Determination of visual exposure and preparation of a visual envelope map to determine the visual catchment of the project
• Selection of viewpoints within the visual catchment that are representative of the varying site conditions and the project
• Evaluation of the project’s visual impact by comparing the sensitivity of existing viewpoints and the magnitude of impact of the project upon them
• Identification of any further mitigating measures that could be incorporated into the design.

1.5 ROADS AND MARITIME DESIGN GUIDELINES

Roads and Maritime have produced a number of design guideline documents for specific disciplines and areas of design aimed at achieving good urban design outcomes. This report has been undertaken with reference to the following guidelines:

• Beyond the Pavement, January 2014
• Bridge Aesthetics, August 2012
• Landscape Design Guidelines, April 2008
• Guidelines for landscape character and visual impact assessment No. EIA-N04, “Version 2.0 Issue Date 28 March 2013”; and consideration of the Roads and Maritime latest revision to this document
2.0 CONTEXTUAL ANALYSIS

2.1 REGIONAL CONTEXT

Batemans Bay is located along the southern coastline of New South Wales and is the main commercial centre of the Eurobodalla LGA (Local Government Area). It is a major regional centre and significant future redevelopment is expected within its town centre to support ongoing population growth. Its proximity to Canberra makes it also a popular coastal tourist destination with a substantial increase in population during peak holiday periods.

Batemans Bay is located around 273 km south of Sydney, and around 148 kilometres east of Canberra (see figure 2.2). The A1 Princes Highway functions as the primary north-south coastal transport corridor, both for local and regional traffic and provides a critical link between the northern and southern end of town, separated by the Clyde River. Hence, the bridge over the Clyde River (see figure 2.1) provides an important link that supports the functioning of the town. From the west, the B52 Kings Highway links Batemans Bay with Canberra. The proposal is located at the Prince Highway crossing of the Clyde River at Batemans Bay, generally between the Kings Highway and North Street.

Figure 2.1 The liftspan towers are a dominant feature of the existing bridge. Source: Aurecon.

Figure 2.2 Regional context map (not to scale)
The area is popular with retirees and has also begun to attract young families seeking affordable housing and a seaside lifestyle.

The landscape surrounding Batemans Bay is of considerable beauty and the natural setting strongly contributes to the overall quality and identity of this urban centre.

The Limit of Works for the project in the north, is the southern side of the existing Princess Highway roundabout with the Kings Highway. In the south, it is the northern side of the existing signalised intersection in the Princess Highway and North Street (see figure 2.3).
2.2 THE BRIDGE

The bridge was constructed in 1956 to replace a ferry as a lift span design to limit construction costs whilst accommodating clearance requirements of maritime traffic using the river at the time. The bridge is around 287 m long and has 10 spans; 4 steel girder spans and 6 truss spans, one of which is the lift span. The normal vertical clearance to mean high water springs (MHWS) for maritime traffic is 3.7 m, but can be raised to a maximum clearance of around 23 m (see figures 2.4 and 2.5).

Major structural elements of the bridge require maintenance intervention and current maintenance costs are high. The carriageway width is narrow, particularly for heavy vehicles, making major structural components of the trusses vulnerable to vehicle impact. The minimum measured vertical clearance for road traffic is 5.24 m. This combination of issues results in a higher risk of network severance at this location.

The timber-related and fishing industries which initially navigated through the bridge have been mostly replaced by commercial and recreational water traffic. Most lifts are made for a local tourist ferry, but the lift span also operates for other commercial vessels, yachts, motor cruisers and for maintenance of the bridge.

Figure 2.4 View of the bridge from the southern river bank. Source: Aurecon.

Figure 2.5 Elevation drawings of the original 1956 constructed bridge.
2.3  THE SETTING

Batemans Bay is a coastal town strongly defined by its riverside setting amongst undulating hills of the NSW south coast. The area is known for its coastal beauty, ease of access to beaches, relaxed holiday destination and for being easily accessible for Canberrans wanting a seaside destination.

The bridge sits within the urban context of Batemans Bay township, connecting the more commercial/industrial/residential areas of Batemans Bay town to the south of the river, to connect with the generally less dense and more dispersed residential focussed developments on the north, with more generous landscape buffers on steeper land, where the Princes Highway and Kings Highway converge.

Figure 2.12 illustrates the key elements of the abundant natural setting with:

- Water systems - Tasman Ocean, Clyde River and McLeods Creek
- Natural green edges- including mangroves, wetlands to the coastal edges and woodland forests to the undulating ridges
- High landforms and major ridgelines
- Beaches
- Enclosing topography focussing on small bays

Other key elements within the study include:

- The heritage ramps and heritage alignment of the existing Old Punt Road that provide interest and landmarks
- The generous open space/recreation areas that provide ease of access around the river’s edge and within the town promenade areas
- Key viewing areas to the existing bridge
- The large, high cutting on the northern approach to the town that dramatises the entry to the bridge and bay below the road level at the cutting.

There will be critical implications for a new bridge crossing and how it interfaces with the local road network, as there are local road connections to the highway at a number of intersections on the approaches to the bridge.