BATEMANS BAY BRIDGE REPLACEMENT

URBAN DESIGN REPORT AND LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

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CONTENTS

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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

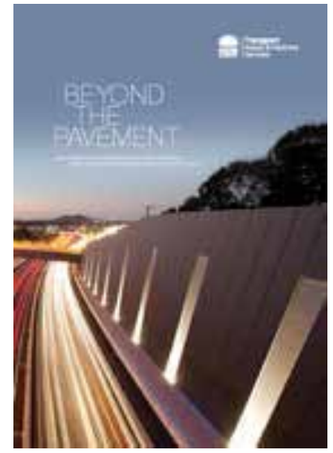
Preparation of this report has involved a desktop analysis and site visits. The methodology used to undertake the study is summarised as follows:

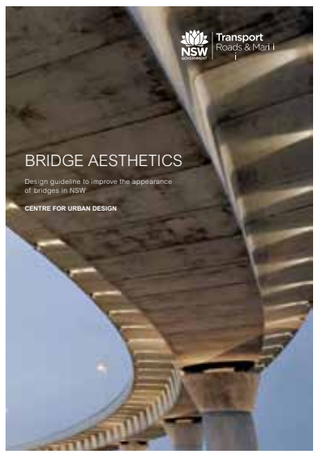
- Background review of the strategic concept design and supporting material to gain an appreciation of the project
- Detailed site visit to identify sensitivities, views, visual catchments, magnitude of change, and to gain a full appreciation of the interface of the proposed bridge in its setting
- Contextual 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 a 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 Princes 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.

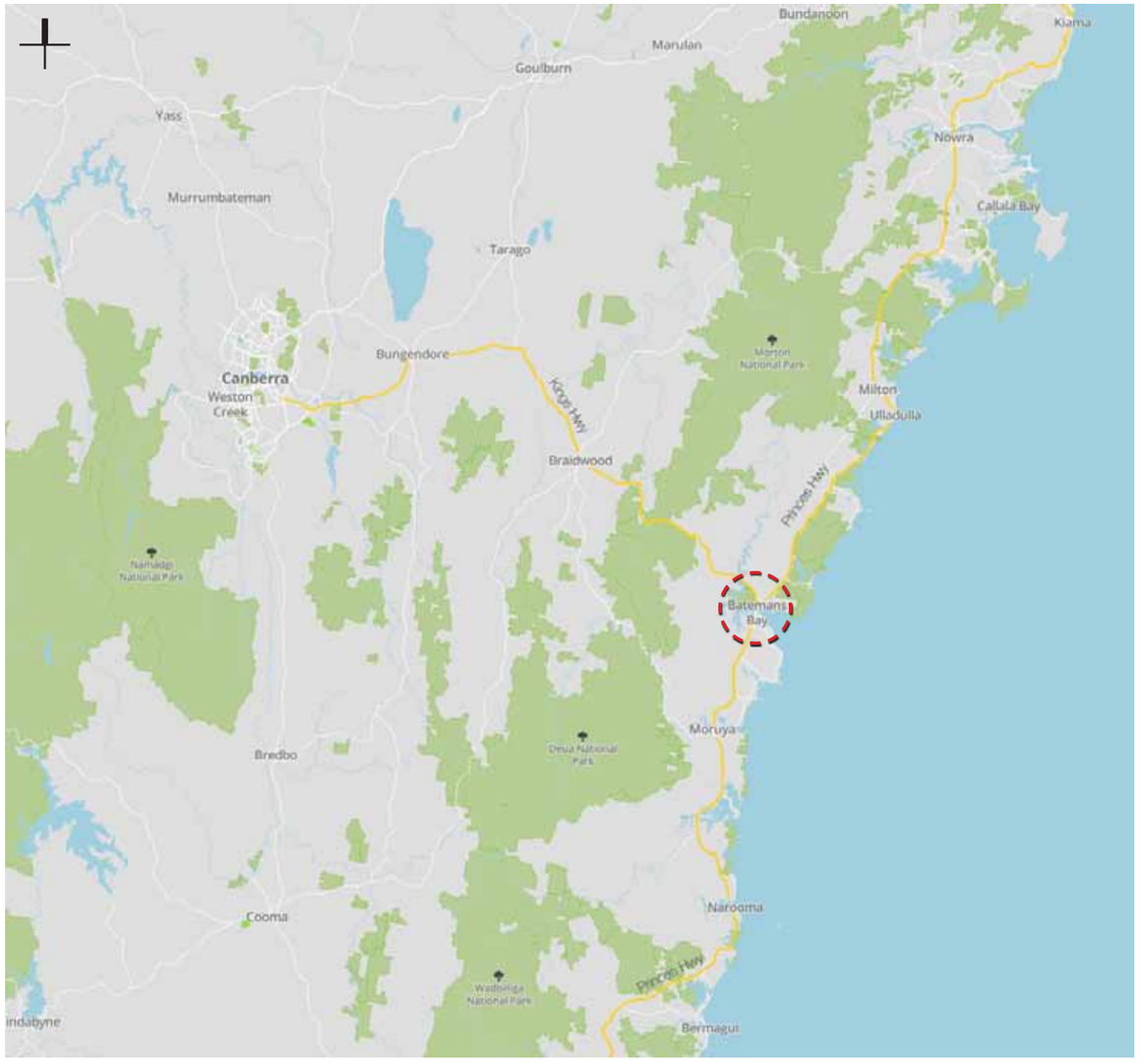


Figure 2.2 Regional context map (not to scale)

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).

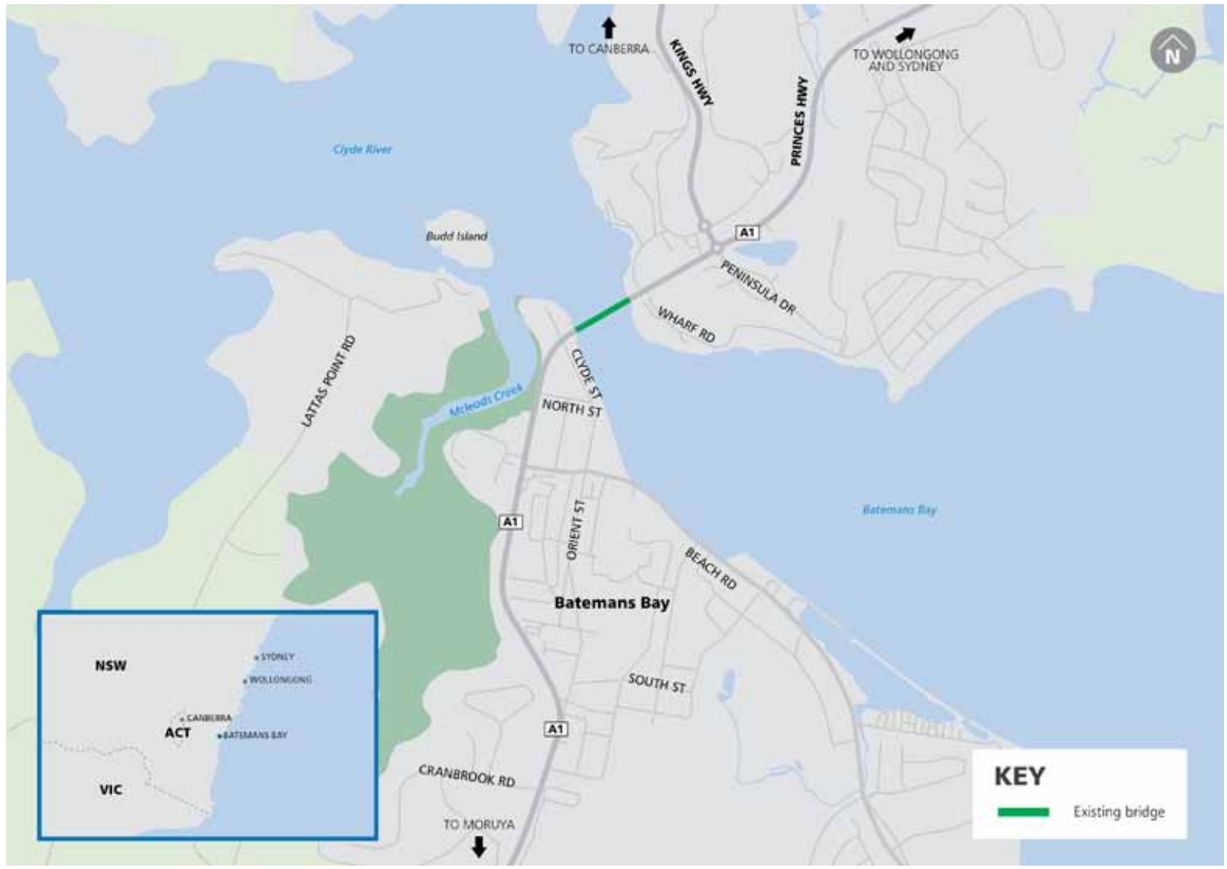


Figure 2.3 Local context map. Source: Batemans Bay Bridge Project Strategic Options Report

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.

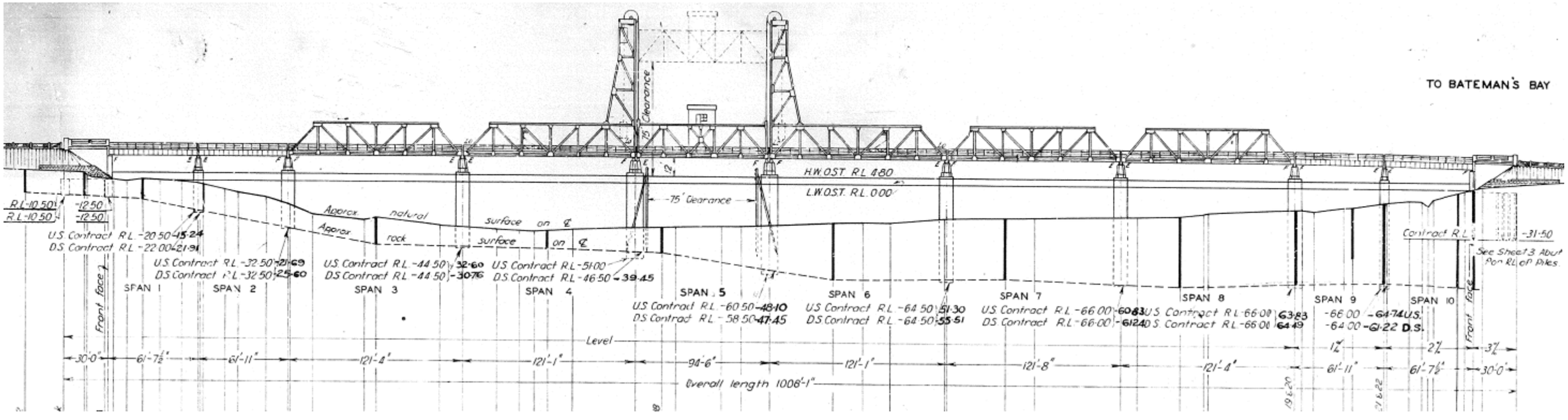


Figure 2.5 Elevation drawings of the original 1956 constructed bridge.

Figure 2.6 The river defines the immediate setting

Figure 2.7 The sea, headlands and nearby islands define the landscape context

Figure 2.8 The forested hills provide a backdrop that frames the setting

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

Figure 2.9 The township acts as an urban gateway within a high quality setting

Figure 2.10 The foreshore park allows the landscape to dominate on the northern foreshore

Figure 2.11 The northern escarpment defines the northern approach

Legend

Land

- High Points
- Primary Ridgelines
- Beaches
- Open Space/ Recreation
- Natural Green Edges
- Built Form

Water

- River & Creeks
- Wetlands

Landmark

- Key heritage significance
- Key contextual views retained
- Bays
- Cutting
- Knoll

Figure 2.12 Landscape context map

2.4 LAND USE

The adjacent map (figure 2.13) illustrates the various land uses identified in the Local Environmental Plan (LEP) in the vicinity of the existing bridge crossing. To the south, the town centre is defined by mixed use, whilst to the north medium density residential dominates the land use.

Note how the southern shoreline of the Clyde River is designated as public recreation and recreational waterways which form an important aspect to the town's interface with the river in the form of a promenade, wharfs and boat ramps. The northern shore is defined by public recreation composed of parklands and a boat ramp.

The strip of land zoned as environmental conservation on the southern foreshore, adjacent to the Mcleods Creek that directly interfaces with the Princes Highway will form an important constraint in the development and review of options for the alignment.

Legend

- B1 Neighbourhood Centre
- B4 Mixed Use
- B5 Business Development
- E2 Environmental Conservation
- E4 Environmental Living
- R2 Low Density Residential
- R3 Medium Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Private Production
- SP2 Infrastructure
- SP3 Tourist
- W1 Natural Waterways
- W2 Recreational Waterways
- DM Deferred Matter

Figure 2.13 Land Use map

2.5 HERITAGE

Historical background

Batemans Bay was named by James Cook in 1770 and the first non-Aboriginal people began to travel across the landscape in 1797. The area was not settled for an extended period possibly due to its lack of arable land.

In 1827, Surveyor Thomas Florance began a survey of the coastline between Jervis Bay and what is now Moruya, reaching Batemans Bay in June of 1828, and naming the islands at its entrance 'Tollgate' and 'Tollhouse' (BIOSIS, page 22)

Pastoralism was attempted in the Eurobodalla region in the 1830s and 1840s without much success. The discovery of gold in the 1850s lead to the development of a local industry and saw milling became an important industry for the region. Thirteen sawmills were operating in Batemans Bay by 1883 and supplied timber for the ship building industry (Turner, 1996; Sawn, 2015).

In the 1890s tourism was introduce via steam ships and later, the construction of roads led to the increase in population and tourism. The existing bridge replaced the historical punt crossing in 1956, which had operated since 1871.

Aboriginal heritage

As noted in the Batemans Bay Bridge Replacement *Aboriginal Cultural Heritage Assessment (by Kelleher Nightingale Consulting Pty Ltd)* report, there is significant aboriginal history of the area. In relation to the proposed project, we quote from the report:

"The proposal area is located within a region that was important to and intensively used by Aboriginal people in the past while members of the contemporary Aboriginal community continue to experience connection with the area through cultural and family associations (cf. Goulding Heritage 2005, SDDE&CS 2006 and SDDE&CS 2007).

The Batemans Bay area sits within a resource rich region encompassing marine and freshwater environments and freshwater and estuary wetlands. These areas provided a rich aquatic and avian resource for Aboriginal people including a wide variety of shellfish, fish, eels, and crabs. The river shallows, wetlands and floodplains also provided a rich source of plant resources for food and medicinal purposes. Aboriginal people also utilised a wide range of land-based resources, including animals such as wallabies and possums, plant foods, and honey as food sources.

Aboriginal people worked at a wide range of jobs in the Batemans Bay area including fishing, sawmills, and seasonal farm work. In addition in the second half of the twentieth century Aboriginal people were employed in dress shops, restaurants, cafes and pubs in Batemans Bay (Donaldson 2008:101). Traditional resource gathering activities, particularly those that centred around the Bhundoo (Clyde) River and the ocean, continued to be a major part of the economic, social and cultural life of the Aboriginal people of the Batemans Bay region throughout the twentieth century.

The Eurobodalla Shire Aboriginal heritage study, which combined historical research, cultural mapping and oral history, stated that the Batemans Bay area, "… continues to be utilized today as a primary resource collection place, particular (sic) for flathead, black bream, blackfish, stingray, green eel, shark, oysters, cockles, leather jackets, mud and mangrove crabs" (Donaldson 2008:100)."

The desktop review of previous investigations showed that archaeological sites in the region generally occurred as shell middens, surface artefact scatters and isolated artefacts on relatively elevated landforms along the margins of the Clyde River and its tributaries.

The predominance of open context artefact sites (artefacts scatters and isolated finds) and shell midden sites in the areas adjacent to the Clyde River and Batemans Bay were seen to indicate that these areas were natural focus points that were extensively exploited for their resources.

Aboriginal archaeological sites that had been identified further away from the Clyde River and Batemans Bay were characterised by low density artefact scatters and isolated artefacts which were located on crest and slope landforms. Previous archaeological investigations suggested that these sites represent the movement of Aboriginal people along ridgelines between the more permanent occupation areas of the coast and inland rivers.

Non-Aboriginal heritage

The Batemans Bay Bridge replacement Heritage Assessment and Statement of Heritage Impact (BIOSIS 2017) report has identified seven non aboriginal sites within or near the study area. As shown in table 2.1.

As Biosis summarised:

Important heritage values identified within the proposal area include:

- *Batemans Bay Bridge located on the Clyde River.*
- *Car Ferry Ramps (former) located on either side of the Batemans Bay Bridge.*
- *Two areas of archaeological potential pertaining to the commercial development of Batemans Bay, which are located on the southern foreshore of the Clyde River either side of the Batemans Bay Bridge.*

Site name	Address / Property description	Listing	Listing Significance
Within the study area			
Batemans Bay Bridge	Princes Highway, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I294)	Local
		Roads and Maritime Services Section 170 Register (Database no. 4301405)	Local
Bay View Hotel	20 Orient Street, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I10)	Local
Car Ferry Ramps (former)	West of Batemans Bay Bridge, Batemans Bay, NSW 2536 (southern ramp only)	Eurobodalla LEP 2012 (Item no. I167)	Local
Coal Bunker Wharf Site	Clyde Street, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I7)	Local
Presbyterian Cemetery	2A Beach Road, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I3)	Local
Near the study area			
The Boatshed and Jetty	1c Clyde Street, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I8)	Local
Roman Catholic Cemetery	1 Bent Street, Batemans Bay, NSW 2536	Eurobodalla LEP 2012 (Item no. I6)	Local

Table 2.1 Summary of Heritage listings within and near the study area, BIOSIS, October Draft Report, 2017

Heritage items listed on the Eurobodalla Local Environmental Plan 2012 (Eurobodalla LEP) are situated in the general vicinity of the proposal, including the Batemans Bay Bridge. None of the listed items are of state heritage significance. It should be noted, that a number of items would be impacted by the proposal, including the existing bridge and the former car ferry ramps due to their close proximity to the proposal. Careful consideration needs to be taken in the spacing of piers and location of alignment to limit impacts to these elements (see table 2.2 and figure 2.14).

(Refer to *'Batemans Bay Replacement Proposal - Non Aboriginal Heritage Report'* for further details and *The Batemans Bay Bridge replacement Heritage Assessment and Statement of Heritage Impact* (BIOSIS 2017)

Batemans Bay

Suburb	Item name	Address	Property description	Significance	Item no
Batemans Bay	Presbyterian Cemetery	2a Beach Road	Lot 1, DP 740584	Local	I3
Batemans Bay	Former Teacher's Residence	8 Beach Road	Lot 2, DP 817820	Local	I4
Batemans Bay	CWA Hall/Former Public School	10 Beach Road	Lot 31, DP 861414	Local	I5
Batemans Bay	Roman Catholic Cemetery	1 Bent Street	Lot 13, Section 4, DP 758064; Lot 1, DP 126112	Local	I6
Batemans Bay	Site of Coal Bunker Wharf	Clyde Street	Lot 7030, DP 1054995	Local	I7
Batemans Bay	The Boatshed and Jetty	1c Clyde Street	DP 758064	Local	I8
Batemans Bay	Former Courthouse, Police Station and Police Residence	3 Museum Place	Lot 101, DP 1001026	Local	I9
Batemans Bay	Bay View Hotel	20 Orient Street	Lot 11, DP 740977	Local	I10
Batemans Bay Bridge	Car Ferry Ramps (former)	(West of) Batemans Bay		Local	I167
Batemans Bay	Ocean View House	2 Pacific Street	Lot 256, DP 755902	Local	I264
Batemans Bay	Batemans Bay Bridge	Princes Highway		Local	I294

Table 2.2 Amended excerpt from the Eurobodalla Local Environmental Plan 2012 LEP showing selected heritage listed properties in the vicinity of the proposal site.

Figure 2.14 Heritage map

Legend

Item - General

Figure 2.15 Batemans Bay Bridge looking northwest.

Figure 2.17 Car ferry ramp on the southern bank, just west of the existing bridge.

Figure 2.19 Ferry ramp on the northern bank.

Figure 2.16 The bridge was officially opened on 21st November, 1956. Source: https://www.beagleweekly.com.au/single-post/2016/11/02/Batemans-Bay-Bridge-Bash---Nov-19th

Figure 2.18 There is an opportunity to enhance the setting surrounding the car ferry ramp with the removal of the existing bridge.

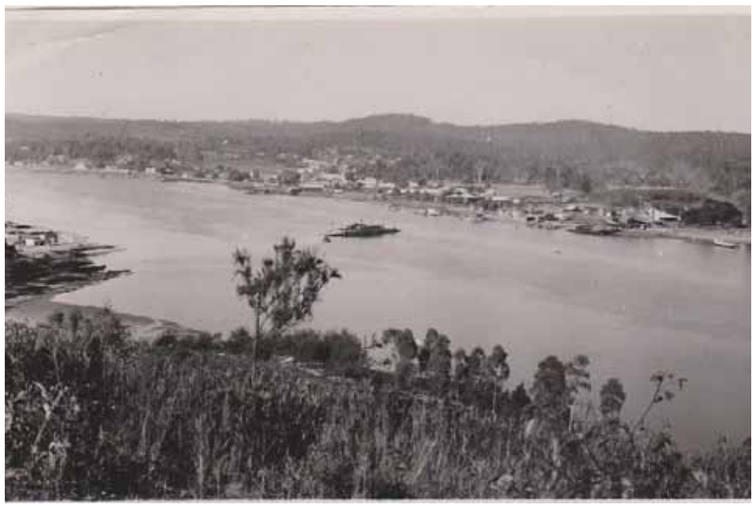


Figure 2.20 View of Batemans Bay and old ferry from Folders Hill, about 1940. Source: https://www.beagleweekly.com.au/single-post/2017/03/12/Past-and-Present-Batemans-Bay-May-7th.

Batemans Bay Town Centre Structure Plan

The Eurobodalla Shire Council has developed the Batemans Bay Town Centre Structure Plan to guide the future development of the area and outline the future character of the town centre environment (see figure 2.21).

The proposal would interface with key areas in the town centre, particularly the foreshore areas, including Clyde Street. Hence it is important to understand the key strategies identified in the Structure Plan such as parking, future development areas, and access etc to ensure that the proposal is consistent with these strategies (refer figures 2.22 to 2.24).

The proposal would impact access to the town centre and the western end of Clyde Street, yet a number of opportunities may be identified as a result of these changes that may contribute to a better urban planning outcome for this area, consistent with the Structure Plan.

Access to Clyde Street

The proposal would eliminate the current access from the Princes Highway to Clyde Street. This will require traffic to use North Street to access Clyde Street, resulting in increased traffic along North Street.

Figure 2.21 The Batemans Bay Structure Plan is a comprehensive document that set out a vision for the future of the township.

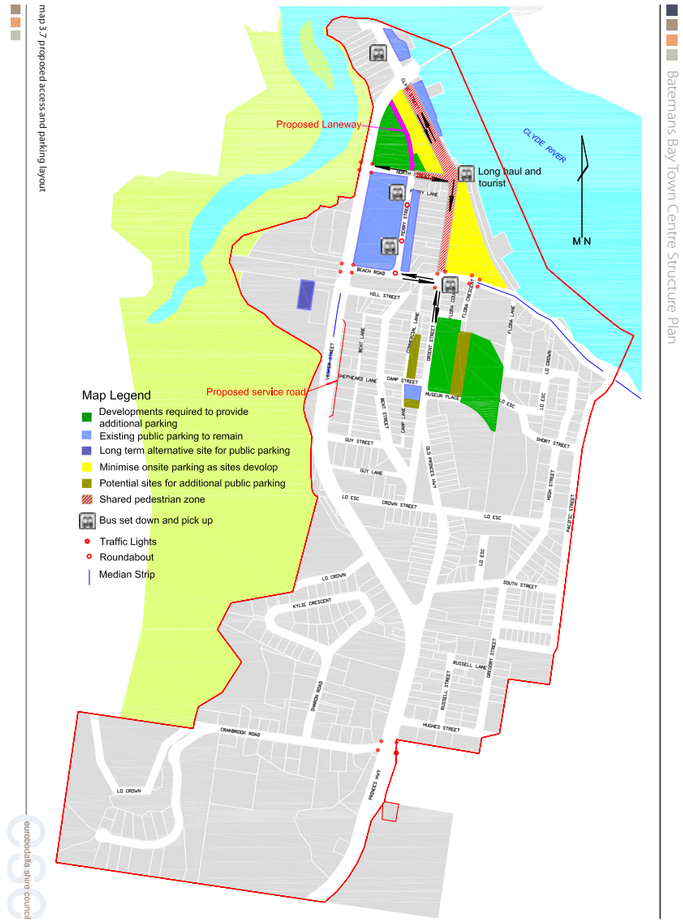


Figure 2.22 *The Structure Plan identifies sections of Clyde Street as shared zones (i.e. hatched red zone)*

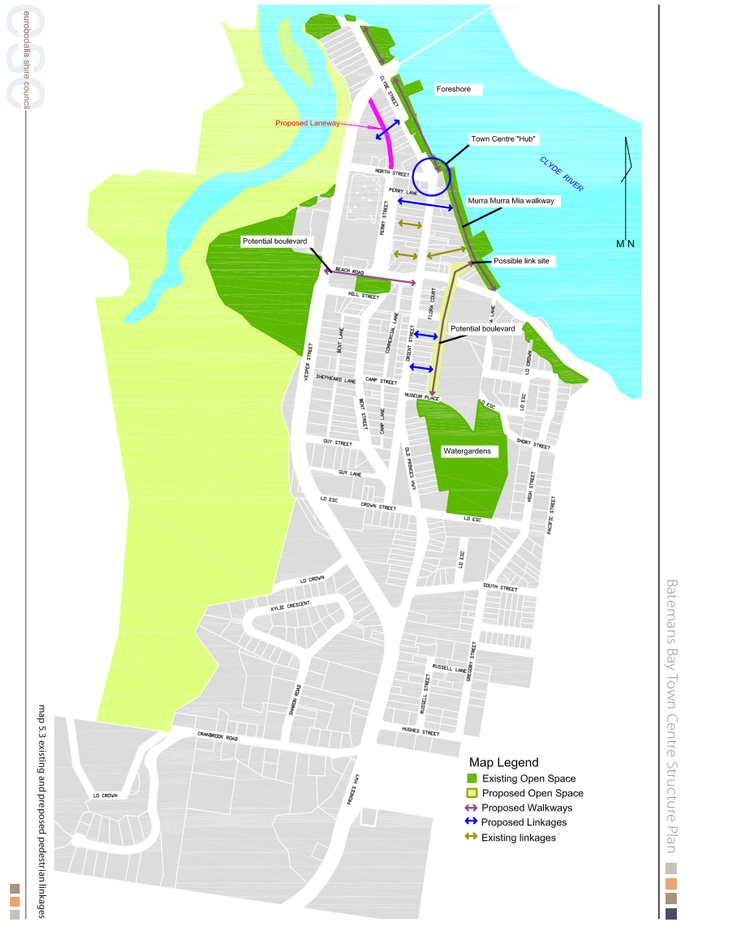


Figure 2.23 *The plan identifies the importance of foreshore linkages.*

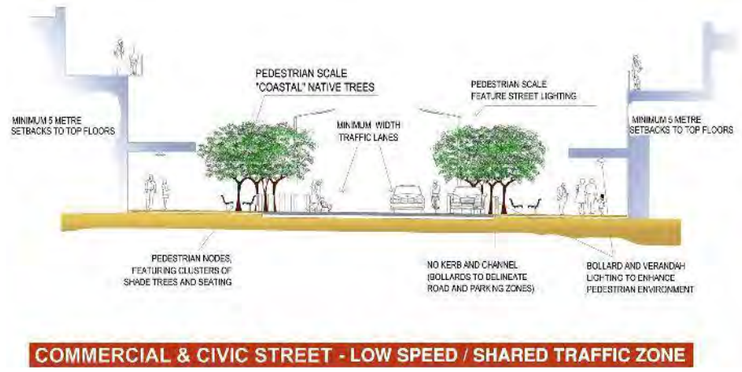


Figure 2.24 Clyde Street is identified as a Civic Street with coastal native street trees and no kerb and channel.

3.0 LANDSCAPE CHARACTER ANALYSIS

3.1 LANDSCAPE CHARACTER ZONES

The are a number of distinct landscape character types in Batemans Bay, each distinguished by its particular combination of land use, topography and built form. The relationship between these landscape character types is an important aspect of the urban experience of the town and the visual experience for the traveller.

The purpose for identifying different landscape character types or zones is to assess levels of sensitivity and to provide a description of each zone, giving the project its context and interface. This will inform the design process, particularly in the identification of impacts and mitigation measures applied as a design tool.

This section also discusses the sensitivity values for each landscape character zone. The sensitivity assessment has been based on RMS's *Environmental Impact Assessment Practice Note - Guidelines for Landscape Character and Visual Impact Assessment No. EIA-N04, Version 2.0 Issue (2013).*

The sensitivity value refers to the qualities of a particular character zone, which may include the number and type of receivers and how sensitive the existing character of the setting is to the proposed change. For example a pristine natural environment will be more sensitive to change than a built up industrial area.

The zones identified in this report slightly differ from the ones identified in the Preliminary Environmental Investigation - *Appendix E: Landscape Character and Visual Investigation* as the preliminary study is of a more strategic nature.

Twelve zones have been identified from which two are within waterways and rest are on land, as illustrated in figure 3.1.

Legend

Water
- A River & Creeks
- B Wetland

Land
- C The Hill
- D Wray Bay
- E North Shore Link
- F Residential High Land
- G Residential Low Land
- H The Promenade
- I Sport Facilities & Bowling Club
- J Batemans Bay Town Centre
- K Batemans Bay
- L Forest

Attractors
- On The Pier Restaurant
- Starfish Deli Restaurant

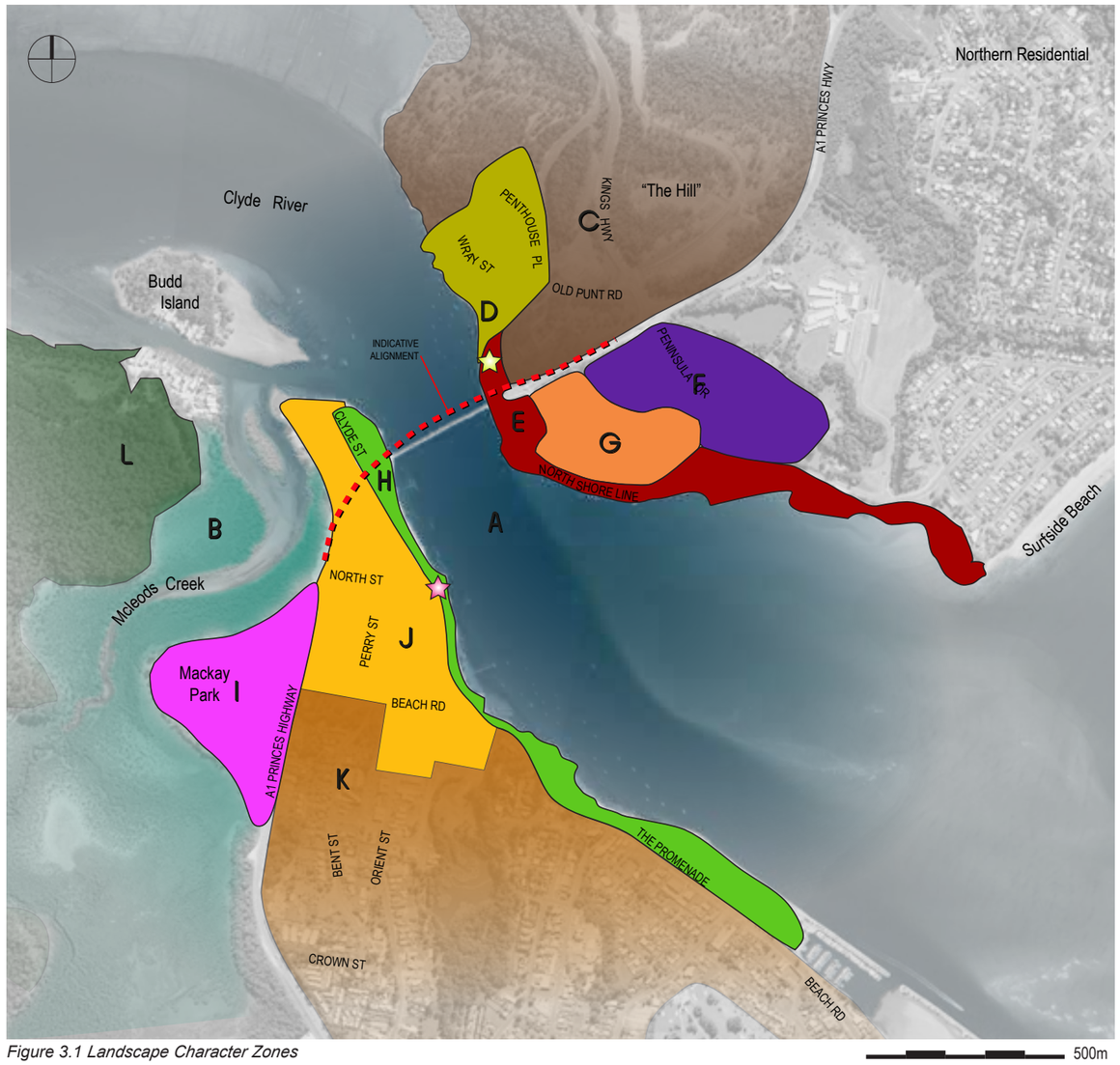


Figure 3.1 Landscape Character Zones

ZONE A: RIVER & CREEKS

Location	This zone comprises the Clyde River which is a focal point for the township and the community of Batemans Bay
Natural Environment	Wide open waterway which is navigable by small vessels. There are no polluting industries in its catchment, nor any sewage outflows, resulting in one of the cleanest waterways of any major river in eastern Australia.
Built Environment	The Clyde River is used for water-based activities such as fishing and boating, kayaking and canoeing.
Spatial Character	Open character with vistas along the Clyde River to the landscape beyond is a key distinguishing factor of this zone
Infrastructure	Boat ramps and moorings present
Sensitivity	**The sensitivity is high due to the scenic and recreational value strongly contributing to the overall character of the setting**

Figure 3.2 View from the existing bridge towards the town centre. The low lying built form is subordinate to the hills beyond, allowing the landscape to dominate.

Figure 3.3 View from the existing bridge looking southwest. The forested hills in the background strongly contribute to the overall sense of place and provide a scenic backdrop.

Figure 3.4 View looking east, moored sailboats in the foreground. The two islands in the background (tollgate Islands) form a distinctive landmark.

Figure 3.5 View from Wray Bay looking towards the existing bridge. The bridge is a dominant feature in its setting with the lifting span towers creating a landmark.

ZONE B: WETLANDS

Location	Situated on the southern banks of the Clyde River and west of the town centre
Natural Environment	The Clyde River estuary footprint represents an assortment of high quality habitats and complex ecotones of intertidal saltmarsh, mangroves and fringing forests
Built Environment	None
Spatial Character	Mcleods Creek provides a more intimate setting with mangroves and salt marshes. The sensitive environment defines the character of this zone
Infrastructure	None visible
Sensitivity	**The sensitivity is high due to the scenic and recreational value that strongly contributes to the overall character of the setting**

Figure 3.6 The dense mangrove cover creates a distinct environment.

Figure 3.7 View from the verge of the Princes Highway looking at the mangroves flanking Mcleods Creek.

Figure 3.8 Swamp Oak Forest fringing saltmarsh at Mcleods Creek. Source PEI - Biodiversity Constraints Assessment.

Figure 3.9 Coastal Saltmarsh on the McLeods Creek floodplain. Source PEI - Biodiversity Constraints Assessment.

ZONE C: THE HILL

Location	Situated on the upper grounds of the northern bank of the Clyde River, extending west of the Princes Highway
Natural Environment	Bushland setting of *South Coast Wet Sclerophyll Forest*, with dense stands of mature trees. Some areas cleared with open grassland.
Built Environment	This zone includes a residential area called Bay Ridge comprised of single storey residential homes surrounded by a bushland setting with mature trees
Spatial Character	This zone's high ground and strong bushland backdrop are key characteristics. This zone has limited or no visual interface with the river, further defining its context within the greater landscape. Undulating topography is separated from the foreshore by a steep escarpment.
Infrastructure	Major roads such as the Princes Highway and Kings Highway, local residential streets. Street lighting at major intersections
Sensitivity	**The sensitivity is considered moderate as this area defines the entry into town. For the residential area a high sensitivity is assessed due to the residential land use being more susceptible to change. For the purpose of this report, a high rating is being adopted**

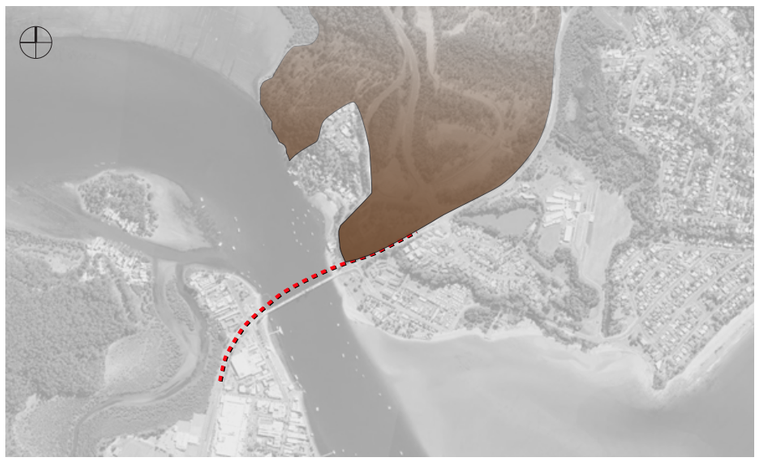


Figure 3.10 View looking towards Old Punt Road. Native forest and open grassed areas are typical within this zone.

Figure 3.11 View of the entrance to the new residential area of Bay Ridge. One of the modern villas can be seen in the background.

Figure 3.12 The motel and other properties are situated on top of the escarpment directly west of the Princes Highway. Mature stands of trees in the foreground provide a visually important backdrop, and are remnants of the South Coast Wet Sclerophyll Forest,

Figure 3.13 View looking north along the Princes Highway, with service station on the left. Notice the strongly undulating landscape and the presence of the native forest.

ZONE D: WRAY BAY

Location	Occupying the lower slopes of the northern river bank, west of the bridge
Natural Environment	Rugged topography with a strong green backdrop of mature trees
Built Environment	Single and double storey homes in a variety of architectural villa styles. Well established area with some commercial properties directly interfacing with the river environment
Spatial Character	Intimate character with strong contextual views overlooking the river. The presence of the river strongly contributes to the sense of place and unique qualities of this zone
Infrastructure	Local roads, overhead power lines and private jetties
Sensitivity	**The sensitivity of this zone is high. Its strong interface with the waterway and residential land use make it an attractive area with a high scenic value**

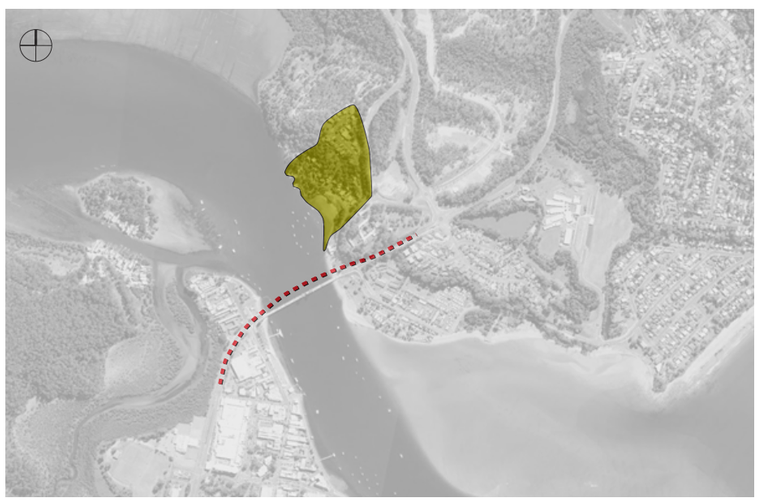


Figure 3.14 View looking from the foreshore towards the residential properties around Wray Bay. The area is well established with single and double storey homes of various styles.

Figure 3.15 View from Penthouse Place provides an indication of the vistas most residences enjoy from their homes. This strong visual interface with the waterway strongly contributes to the identity and sense of place of these properties.

Figure 3.16 View looking from the intersection of Old Punt Road and Wray Street overlooking at Wray Bay. This zone has a strong interface with the waterway.

Figure 3.17 View from the higher grounds overlooking the Clyde River. The residential area around Wray Bay is well established with predominantly single storey homes of various styles.

ZONE E: NORTH SHORE LINK

Location	This zone stretches along the northern foreshore of the Clyde River from Wray Bay to Pinnacle Point at Surfside Beach
Natural Environment	Foreshore parklands with picnic areas and stands of mature trees. To the east pockets of native foreshore forest and open grassed areas. Remnant ares of *Southern Lowland Wet Sclerophyll Forest*.
Built Environment	Minor elements such as amenities block, picnic shelters car parks and playground equipment
Spatial Character	Open character with views across the Clyde River and the forest covered ridgelines to the southwest. Predominant low elevation and flat topography
Infrastructure	Car park, amenities block, picnic shelters, playground equipment
Sensitivity	**This zone is high in sensitivity as it is an important recreational space for the community. Picnic shelters have recently been replaced, underpinning the popularity of this zone**

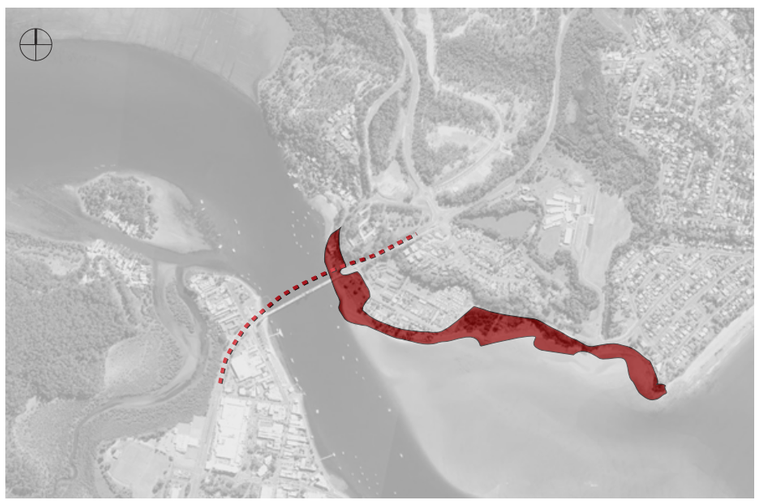


Figure 3.18 The northern foreshore, east of the bridge has a parkland character with open views to the landscape beyond. To the right of the photograph the densely vegetated escarpment.

Figure 3.19 View towards the bridge with the East Riverside Holiday Park to the right of the photograph. The extensive mature vegetation limits the presence of the holiday park.

Figure 3.20 West of the bridge, a car park, boat and picnic facilities are provided along the foreshore.

Figure 3.21 View of the restaurant On the Pier which includes an outdoor deck for alfresco dining. This is a key attractor along the northern foreshore.

ZONE F: RESIDENTIAL HIGH LAND

Location	Occupying the upper grounds, east of the Princes Highway.
Natural Environment	Established manicured gardens with pockets of native forest in the background. Extensive lawn areas with buildings well set back from the street.
Built Environment	Residential area with a cohesive built form character of single and double storey villa style residences.
Spatial Character	Open vistas to the north with native forest as the backdrop. The escarpment to the south defined by a ribbon of mature vegetation delineates the southern edge of this zone. Residences along this edge have filtered views overlooking the Clyde River
Infrastructure	Existing local roads and street lighting. Underground utilities
Sensitivity	**The sensitivity of this zone is high due to its residential land use being sensitive to any change to its character**

Figure 3.22 View looking towards the Kings Highway and the intersection with the Princes Highway. Residences are situated on large blocks that contribute to the suburban character of the area.

Figure 3.23 This residential area is comprised of modern villas with manicured gardens on large lots. Source: Google Streetview

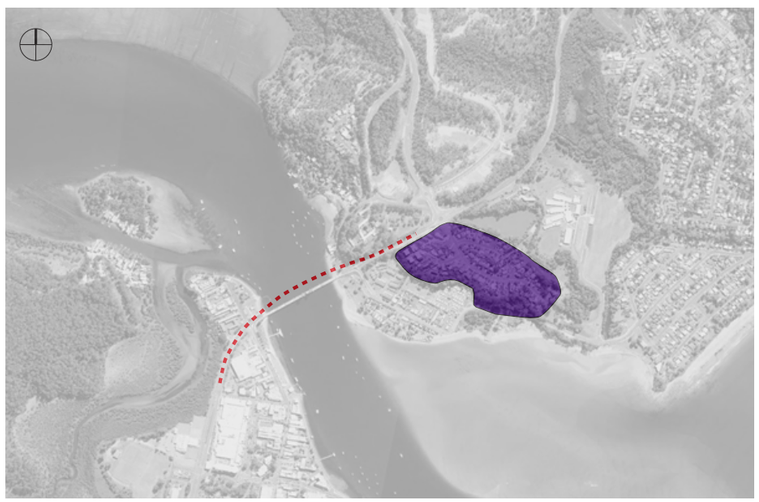


Figure 3.24 View along Peninsula Drive. This residential area has a cohesive appearance partially due to the extensive greenery of front yards, allowing built form elements to settle better in the setting. Source: Google Streetview

Figure 3.25 The undulating landscape allows district views towards the north. Source: Google Streetview

ZONE G: RESIDENTIAL LOW LAND

Location	Wedged between the foreshore and escarpment, this zone is a low lying pocket east of the Princes Highway
Natural Environment	Tree covered escarpment to the north defines the northern boundary of this zone. Variety of vegetation including palms, pines, bushes and shrubs that provide a strongly modified natural environment
Built Environment	A variety of built form including low rise residential apartments/townhouses, single and double storey homes, tourist accommodation and caravan park
Spatial Character	Somewhat enclosed character with limited views due to adjacent built form elements and the escarpment. Flat and low topography.
Infrastructure	Overhead power lines and limited street lighting
Sensitivity	**The sensitivity to this area is considered high due to its residential use, particularly as a holiday destination where people will spend extensive recreational time in.**

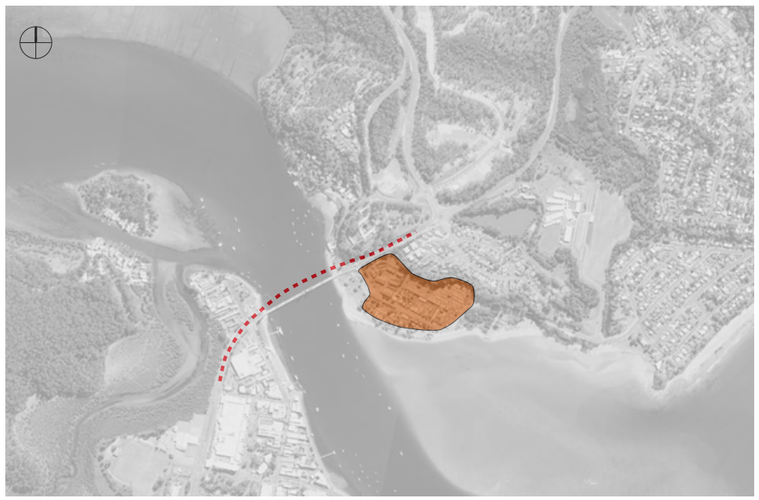


Figure 3.26 View of the townhouses/apartments adjacent to the Princes Highway. Note the strong vegetative backdrop along the escarpment that mitigates the prominence of built form elements.

Figure 3.27 Entrance to the holiday park which is composed of a variety of built form elements including caravans, cabins and cottages. Source: Google Streetview

Figure 3.28 The caravan park on the eastern end of this zone reinforces the holiday type destination of the area. Source: Google Streetview

Figure 3.29 This zone also includes modest homes of various architectural styles. Source: Google Streetview

ZONE H: THE PROMENADE

Location	Linear strip of foreshore along the southern bank of the Clyde River adjacent to the town centre
Natural Environment	Extensive hardscape areas with some open grass spaces and streetscape vegetation. Parkland setting with picnic shelters at the western end of this zone with stands of trees and a mown grassed understorey
Built Environment	A variety of built form elements from single and double storey homes, double storey hotel/motel accommodation to retail strip of single and double storeys
Spatial Character	Open vistas to the landscape beyond with the waterway as a focal point. Panoramic views across the river include the existing bridge, boats and forest ridgeline beyond. This zone provides a key interface with boating and river activities
Infrastructure	Foreshore promenade includes shared pedestrian and cycle path and street lighting. Extensive car park areas and foreshore park west of the existing bridge include picnic shelters and a boat ramp
Sensitivity	**Highly sensitive zone that is popular for locals and visitors alike**

Figure 3.30 View from the bridge looking east along the promenade. The southern foreshore is a most important urban element for the township. Wharfs and jetties complement its usage.

Figure 3.31 To the east of the bridge, the promenade is wedged between the river and commercial properties and has a more formal character.

Figure 3.32 Adjacent to the existing bridge is a large car park and boat ramp, reinforcing the interface with the waterway.

Figure 3.33 The western end of this zone terminates as a park with picnic facilities and a playground.

ZONE I: SPORT FACILITIES & BOWLING CLUB

Location	Wedged between the Mcleods Creek and the Princes Highway, south of the Clyde River
Natural Environment	Highly modified urban environment with some stands of mature native trees. Extensive grassed areas used for sportsfields and functions
Built Environment	Limited built elements in the form of single storey buildings
Spatial Character	Open character with extensive grassed areas allow for district vistas beyond. This zone is composed of various sporting and recreational facilities including a bowling club, mini golf, swimming centre and sportsfields
Infrastructure	Extensive car parks
Sensitivity	**The sensitivity of this zone is moderate. This zone is predominantly used for recreational purposes including sports. The introverted nature of this zone makes it less susceptible to change**

Figure 3.34 The bowling club is a distinct element along the western road verge and includes a restaurant facility. Power lines limit street trees along the verge with the Princes Highway.

Figure 3.35 Adjacent to the bowling club is a mini golf facility, complementing the land usage of this zone for sporting/recreational facilities.

Figure 3.36 The Batemans Bay Swimming Centre is also situated in this zone. Source https://www.google.com.au/search?q=batemans+Bay+public+swimming+pool&ie=utf-8&oe=utf-8&client=firefox-b&gfe_rd=cr&ei=Cd9dWY_gI-HDXuSEgpAP#q=batemans+Bay+swimming+centre

Figure 3.37 Bordering with Mcleods Creek is Mackay Park, is a major sports and function centre that is an ideal venue for large gatherings, social and activity groups.

ZONE J: BATEMANS BAY TOWN CENTRE

Location	Wedged between the Princes Highway and the foreshore promenade
Natural Environment	Highly modified urban environs with minimal greenery, dominated by car parks and built form elements. This area sits low and flat in the landscape setting
Built Environment	A variety of building typologies both in scale and style provide a somewhat un-unified built form ensemble. This zone comprises predominantly of single and double storey buildings either in the form of strip malls or as single properties
Spatial Character	Due to the variety of built form elements and styles, the streetscape character lacks cohesion. The lack of streetscape vegetation and dominance of carparking contribute to this outcome
Infrastructure	Street lighting and overhead power lines. Local roads and car parks dominate the streetscape in key areas
Sensitivity	**The sensitivity of this zone is considered high albeit its commercial land use due to its importance to the community and visitors alike. The town centre provides an important function for the tourism industry**

Figure 3.38 Aerial view looking towards the town centre (centre of photo). The town centre is situated in a peninsula like setting, bordered by the Clyde River and Mcleods Creek. Source: Batemans Bay Town Centre Structure Plan.

Figure 3.39 View looking along North Street at the intersection with Perry Street. The Village Centre is to the left of the photograph. Source: Google Streetview.

Figure 3.40 West of the bridge, a car park, boat and picnic facilities are provided along the foreshore whilst cafes flank the south verge of Clyde Street.

Figure 3.41 A number of hotels are located west of the Princes Highway. These properties flank Clyde Street and overlook either Mcleods Creek or the foreshore park/car park.

ZONE K: BATEMANS BAY

Location	Situated directly south of the CBD. This zone includes low lying areas and higher grounds.
Natural Environment	The Water Garden Town Park is an important open space with a large pond. The park provides a valuable habitat for birds and a boardwalk links across the water body.
Built Environment	Established urban area, predominantly residential with some businesses and a major park. Residences are predominantly single storey
Spatial Character	Open character with generous building setbacks that offer extensive greenery. Vegetation within this zone contributes to the natural character of the area.
Infrastructure	Local road network and prominent overhead power lines
Sensitivity	**The sensitivity is high due to the residential land use, the town park and historic character**

Figure 3.42 Water Garden Town Park is a high quality setting that reinforces the natural character of the area. Source: https://www.facebook.com/photo.php?fbid=10153835632319671&set=a.10153835626044671.1073741853.585259670&type=3&theater

Figure 3.43 View along High Street. This area includes larger type developments. Source: Google Streetview.

Figure 3.44 Various residences along Bavarde Avenue enjoy panoramic vistas towards the bay. Source: Google Streetview.

Figure 3.45 View along the Old Princes Highway where some commercial properties flank the road. Source: Google Streetview.

ZONE L: FOREST

Location	West of Mcleods Creek
Natural Environment	Dense vegetated setting that acts as a backdrop from numerous vantage points, Main vegetation is *Southern Lowland Wet Sclerophyll Forest.*
Built Environment	None
Spatial Character	Dominant green dense forest
Infrastructure	None, natural environment
Sensitivity	**The sensitivity of this character zone is high. The area is a pristine natural environment highly sensitive to change. This zone contributes to the identity of Batemans Bay**

Figure 3.46 Aerial view with the wet schlerophyll forest in the foreground (right of picture). Source: http://pcnsw.onefireplace.com/event-901042

Figure 3.47 Looking south from Wray Bay towards the southern foreshore of the Clyde River, with the "Forest" zone behind

Figure 3.48 Looking south from Wray Bay, with the strong green backdrop of the "forest" zone- Southern Lowland Wet Sclerophyll Forest, and the foreground of mangroves and South Coast Wet Sclerophyll Forest of Wray Bay

4.0 URBAN DESIGN VISION, OBJECTIVES AND PRINCIPLES

4.1 VISION

The Batemans Bay Bridge should be a sensitively placed element in the greater landscape context with a clear, legible and well-proportioned structure that signals the arrival into Batemans Bay. Due to its high visual exposure, the bridge should have a design that responds to its high visibility and iconic presence within the local landscape setting of Batemans Bay. The structure should be an elegant bridge with clean lines that contributes positively to the riverscape and identity of Batemans Bay.

The bridge should enhance the area's urban accessibility and urban connectivity, including maritime traffic to support the overall functioning of the town, acting as a catalyst for the urban regeneration of Clyde Street. This overall vision does not attempt to prescribe a particular solution, but rather identifies critical elements that define its integration within the greater landscape.

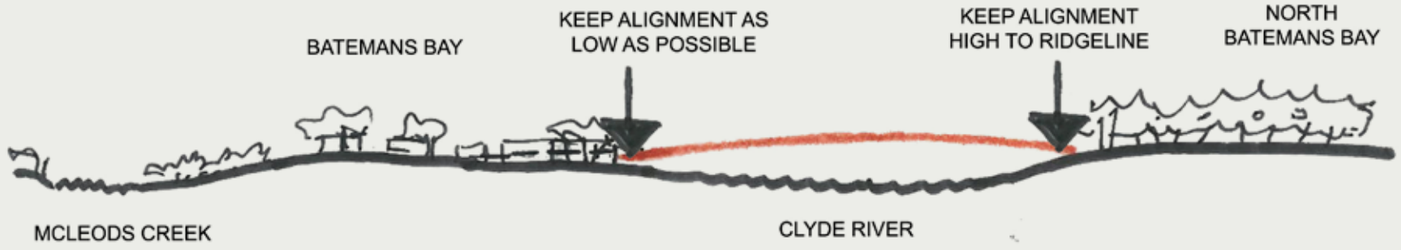
Figure 4.1 Looking from the boat ramp on the southern foreshore towards the existing bridge and across to Batemans Bay township

4.2 URBAN DESIGN OBJECTIVES

The following project specific urban design objectives have been identified as key mitigating measures to integrate the new bridge in its setting. These design objectives have been applied in the development of the concept design and should further guide the design development.

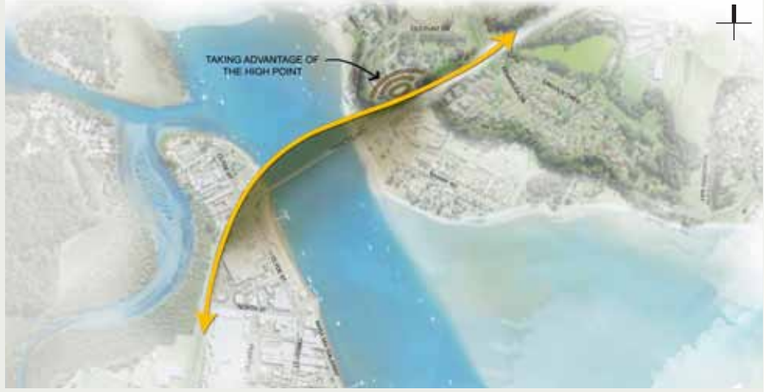
1 Relate to the greater landscape context

It is important to achieve a resolved vertical alignment that responds to the water setting and the landform. Creating a slightly arched structure in elevation will help deceive the vertical asymmetry at the approaches. It is important to reduce the height of the structure at the southern bank to better integrate with the urban fabric.



2 Create an arched form that relates to the topography and the bay

The horizontal alignment should form an arch to relate to the sinuous landscape setting and to embrace the bay



3 Maximise the forested character to the north

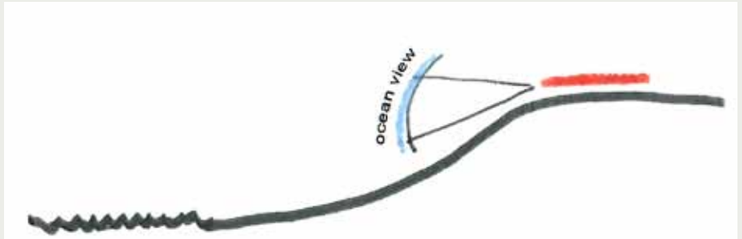
Maximise the green, indigenous forested character on the northern ridgeline as far as practical to convey the local forest character of the area, and to settle the structure into this sensitive environment.

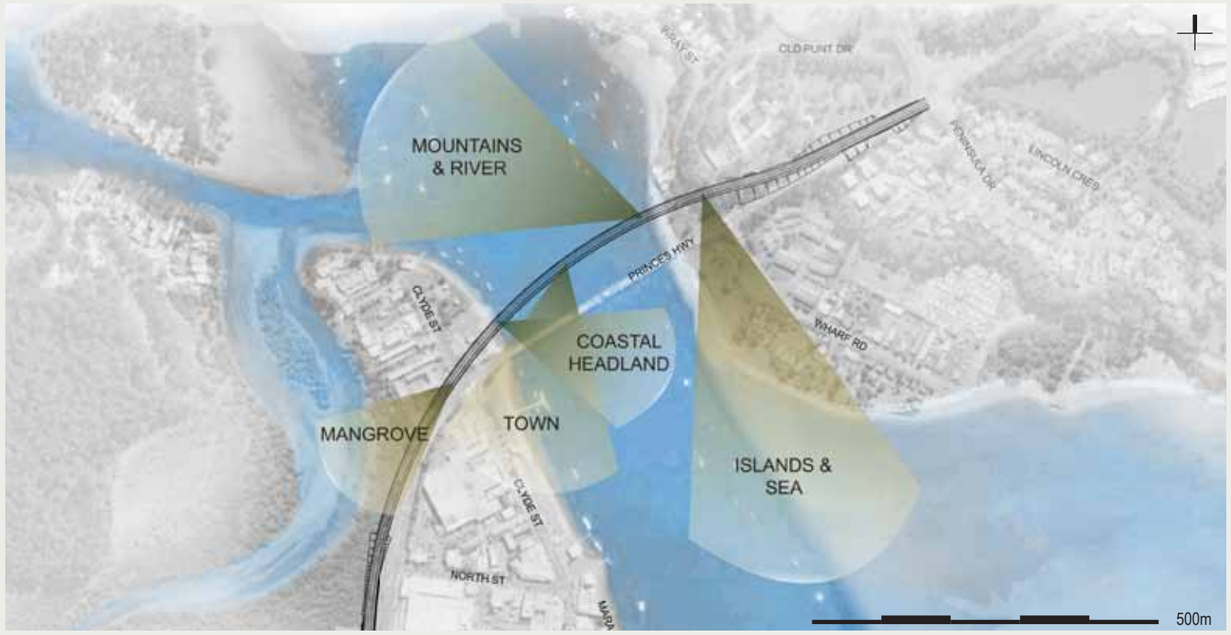
The mature skyline trees along the escarpment form an important visual element of the landscape and provides visual screening to areas beyond.

4 Capitalise on viewing opportunities

The bridge should be engaging to users, by offering opportunities to capitalize on panoramic views that reinforce the landscape presence through views and panoramic vistas to the ocean, islands, town centre, river and the mountain ranges beyond.

This combined with the horizontal arched alignment allows views towards the greater landscape with each section of the journey providing a unique experience of vistas.





View looking north to the coastal headland

View looking west, across the bay/river to the hills and distant ranges

First view of the ocean and the islands attained from the high ridgeline to the north

5 Explore opportunities to express the geology of the cutting

There is opportunity to express the geology of the cutting where possible, and also to sit the bridge structure on the top of the cutting, to reflect the local response seen in Batemans Bay and environs of similar relationship with buildings sitting atop rock cuttings.

This approach of expressing the geology in creative ways, rather than adopting mitigation structures with planted berms would be more appropriate for this bridge language. Hence, consider abutment walls rather then spill through batters.

6 Be an elegant bridge, with clean lines

Due to its high visual exposure, the bridge should be elegant, with clean lines and contribute positively to the riverscape, and not adversely impact upon the existing water views from numerous vantage points.

Opportunities should be considered to create a more engaging structure with improved amenity for pedestrians and cyclists.

7 Be consistent with Batemans Bay Structure Plan

The proposal should contribute to the implementation of the Structure Plan vision by introducing change that contributes positively to the identity of the town centre.

8 Improve Batemans Bay's amenity

The new bridge will provide a number of opportunities that would allow the improvement of parklands, foreshore promenade, access to foreshore, boardwalks etc. Such opportunities should be capitalised to provide a project legacy to the township of Batemans Bay.

9 Enhance Batemans Bay's accessibility

The bridge should enhance the area's urban accessibility and not compromise the current accessibility for maritime traffic. This vision's important objective does not attempt to prescribe a particular solution, but rather identifies important elements that define its integration within the greater landscape.

10 Integrate the new earthforms and improve foreshore visibility

The project offers opportunities to improve foreshore links and visibility- on the northern foreshore, there is scope to integrate the filling of the earth batters with the surrounding landscape, and to remove the embankment holding up the existing bridge ; and on the southern foreshore, there is also scope to remove sections of the existing bridge embankment.

4.3 URBAN DESIGN PRINCIPLES

Based on the vision and overriding objectives, a number of detailed urban design principles have been developed based on the Beyond the Pavement design principles, intended to guide the future design development process.

Create a gateway that contributes to the identity of Batemans Bay

- ***Visually relate to the horizontality of the waterway,*** through slightly arching the deck to visually off-set the difference in height between the two approaches. Consider long spans to visually reinforce this effect and settle the overall structure in the setting. This is important, particularly due to the overall height of the deck above the waterway. This would also assist in ***maximising panoramic vistas along the crossing***
- ***Create a distinctive structure and help settle it in the landscape***, through considering use of colour or oxides that would reduce the visual contrast of the structure from numerous vantage points, thereby limiting its visual impact. Avoid any double pier configurations to ensure visual simplicity and an uncluttered design resolution.
- ***Consider night-time lighting that minimizes glare*** to areas further afield and i***ntroduce feature lighting to celebrate the river crossing.*** It is preferred to limit the height of street lighting poles to reduce glare and the apparent height of the overall structure while complying with lighting standard requirements
- ***Ensure that street lighting on the bridge is aligned with the rhythm of the superstructure.*** Avoid random looking light pole spacing. Locate lighting poles to one side only of the bridge (not staggered) and along the western parapet side. Avoid any outreach configurations for light poles if possible
- ***Introduce landscape strategies that reinforce the indigenous vegetation patterns of the area,*** where feasible to settle the bridge into its setting, enhance biodiversity, and provide recluse for wildlife

Contribute to the urban structure, functioning and permeability of the area

- ***Enhance urban permeability*** along the foreshore banks. Allow the bridge to span over Clyde Street at the southern approach
- ***Retain or enhance the current accessibility of maritime traffic under the bridge.*** This is a key constraint that influences the height of the structure. This height is seen as an opportunity in terms of the visual experience for bridge users, particularly for southbound traffic
- ***Link the bridge alignment with existing pedestrian and cycle networks,*** in particular with the foreshore promenades and park facilities. Consider access stairs in the vicinity of Clyde Street, Ensure that the regional cycleway connectivity is retained along the Princes Highway, south of Clyde Street. Improve the connectivity and permeability along the promenade east of the existing bridge with the boat ramp and park to the west of the bridge
- ***Consider integrating a viewing platform*** for people to engage with the river and landscape setting through the potential use of retained abutments of the existing bridge
- ***Introduce new open space parklands to visually enhance the foreshore.*** This applies to both foreshores and in particular the southern foreshore to provide a softer appearance to the town centre precinct
- ***Improve the streetscape quality of Clyde Street.*** Introduce street trees along Clyde Street to soften the foreshore character
- ***Introduce pedestrian crossing points*** across Clyde Street with a raised threshold to prioritise pedestrian movements
- ***Create a river crossing that is safe and comfortable to use.*** Pedestrian and cyclist amenity is important to be considered to promote alternative modes of transport and promote the accessibility to both foreshores
- ***Ensure consistency with the Batemans Bay Structure Plan.*** Build on the initiatives identified in the structure plan such as improved connectivity to the foreshore, enhanced linkages between foreshore areas, traffic calming strategies etc
- ***Limit potential traffic impacts to North Street.*** Provide alternative access and capacity to recreational boating facilities such as the boat ramp on the northern foreshore

Respect the sense of place

- ***Minimise impacts to the treed major ridgeline to the north***. This ridgeline forms a strong green edge definition to the north, and provides effective screening to views also from the Wray Street Bay area. The tree species are large, mature, indigenous trees of high ecological and visual value
- ***Minimise impacts to the mangroves on the southern approach***. This area is ecologically important and provides a strong visual backdrop as travellers arrive into the town centre from the north
- ***Retain the amenity of parklands and residential areas*** surrounding the proposal along the northern and southern river banks. Carefully consider the location of piers and abutments and how these elements interact spatially with the surrounding foreshore
- ***Improve the spatial permeability and continuity of the foreshore parks and promenade*** by re-grading earthworks of the approaches to the existing bridge

- ***Integrate northern approach of the new bridge*** by using excess fill from the regrading of the northern approach of the existing bridge and regrading the interface of the new works with the existing highway levels
- ***Use indigenous vegetation*** in the application of landscape design strategies to complement the setting
- ***Consider the integration of a heritage interpretation strategy*** and the potential to recycle sections of the existing bridge as a way to celebrate and respect the old bridge. There are great opportunities to integrate a viewing platform at the northern abutment with heritage interpretation. A similar approach may be considered at the southern abutment to minimise disturbance of earthworks and impacts to mature vegetation
- ***Consider landscape strategies to settle the approach structures*** of the bridge. The use of large tree species, to reinforce the existing indigenous vegetation along the southern approach would assist in reducing the apparent scale of the structure and its approaches
- ***Evaluate opportunities to create shared zones with maximum 10km/hr speeds along sections of Clyde Street*** to improve the pedestrian permeability of the foreshore with parts of the town centre
- ***Express the difference between the two banks***, one high and one low; one uses the topography whilst the other is a built form element. It is important to mitigate the overall height and length of the structure at the southern approach. As such the vertical alignment requires careful consideration
- ***Ensure green buffers*** are retained at the interface with residential areas and the bridge's northern approach
- ***Minimise impacts to private properties,*** particularly the Pier Restaurant and environs on the northern bay foreshore
- ***Utilise the wide open space on the northeast*** if opportunity arises with the road corridor as the vegetation on this side is of poorer quality, and contains less indigenous tree species, than the other side of the ridgeline/cutting. There is also a generous grassed buffer between existing dwellings and the road corridor. The trees on the batter to the north east are also in decline.
- ***Create a stronger streetscape on the southern bridge approach t***o mitigate the environment where existing overhead power lines and large scale industrial/commercial buildings dominate the setting.

Exploit views and vistas and minimise impact to existing panoramic views

- ***Limit the number of piers*** to allow for visual permeability from different vantage points. A span of at least 50 metres is recommended. Consider reducing the approach span lengths as the structure reduces in height.
- ***Consider panoramic vistas*** from surrounding foreshore areas and review visual and landscape character impacts
- For structures with larger spans, ***carefully consider the bulk and proportions*** of these elements. It is good to limit the depth and width of piers to minimise view impacts, particularly from obtuse angles
- ***Exploit views and vistas from the bridge,*** especially from the northern ridgeline, and consider the height of the structure in its overall setting
- ***Avoid locating noise walls along the bridge, where possible*** as this will greatly impact the quality of panoramic views and vistas.

Be effective to build and require minimal maintenance

- ***Minimise conflicts with existing infrastructure***, including underground services, boat ramps etc.
- ***Be cost effective and practical to construct,*** without creating significant risks to safety
- ***Consider construction methodologies that limit environmental impacts to the waterways.***

5.0 BRIDGE GEOMETRY AND CONSIDERATION OF OPTIONS

5.1 DECK GEOMETRY

While the bridge is to initially include lane marking for two lanes of traffic, one in each direction and include a shared pedestrian and cyclist path, the deck has been configured to eventually accommodate four traffic lanes.

This results in an overall deck width of about 20M, with the superstructure in the form of a box girder centrally located in relation to the deck.

For the superstructure, an incrementally launched box girder has been assumed at this stage. This does not preclude the use of a haunched type girder solution or other superstructure typology, hence providing flexibility for a different construction methodology should this arise in the later design stages of the proposal.

The use of a box girder has been determined as a practical solution that utilises concrete to minimise future maintenance issues, compared to a steel superstructure. An incrementally launched box girder solution allows spans in excess of 50 metres to be achieved, limiting the number of piers in the waterway compared to a precast system.

The use of a superstructure situated below deck allows open vistas and views for bridge users to the landscape beyond to be maximised. The proposed superstructure is an appropriate solution that is safe to build compared to other more complex structures.

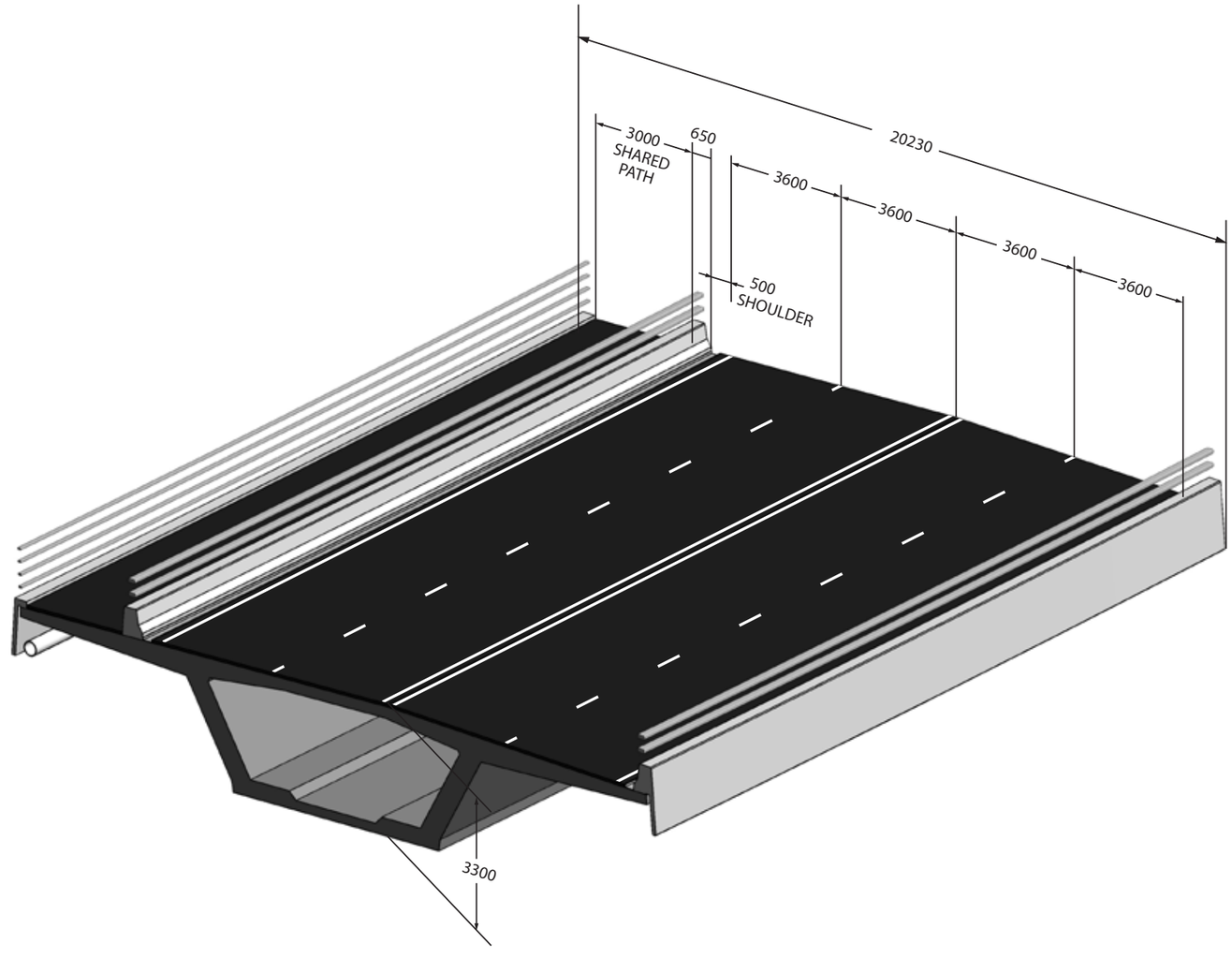


Figure 5.1 Proposed bridge section. Source: Aurecon

5.2 CONSIDERATION OF ALIGNMENT OPTIONS

Although the Batemans Bay Bridge - Strategic Urban Design Bridge Options Study identified a preferred alignment, three options were considered as part of a refinement and re-evaluation process undertaken in the form of a Value Management Workshop.

All presented options avoid or have less impacts to the sensitive mangrove environs of Mcleods Creek compared to the strategic options previously investigated.

5.2.1 Eastern Option

The Eastern Option is situated east of the existing bridge and has a straight alignment from abutment to abutment. The northern approach would impact a residential development through the loss of vegetated screening, and the likely introduction of a retaining structure. At the southern approach, the bridge would extend past Clyde Street to ensure east west connectivity along Clyde Street. This option encroaches towards the town centre area which is considered undesirable from an urban planning point of view.

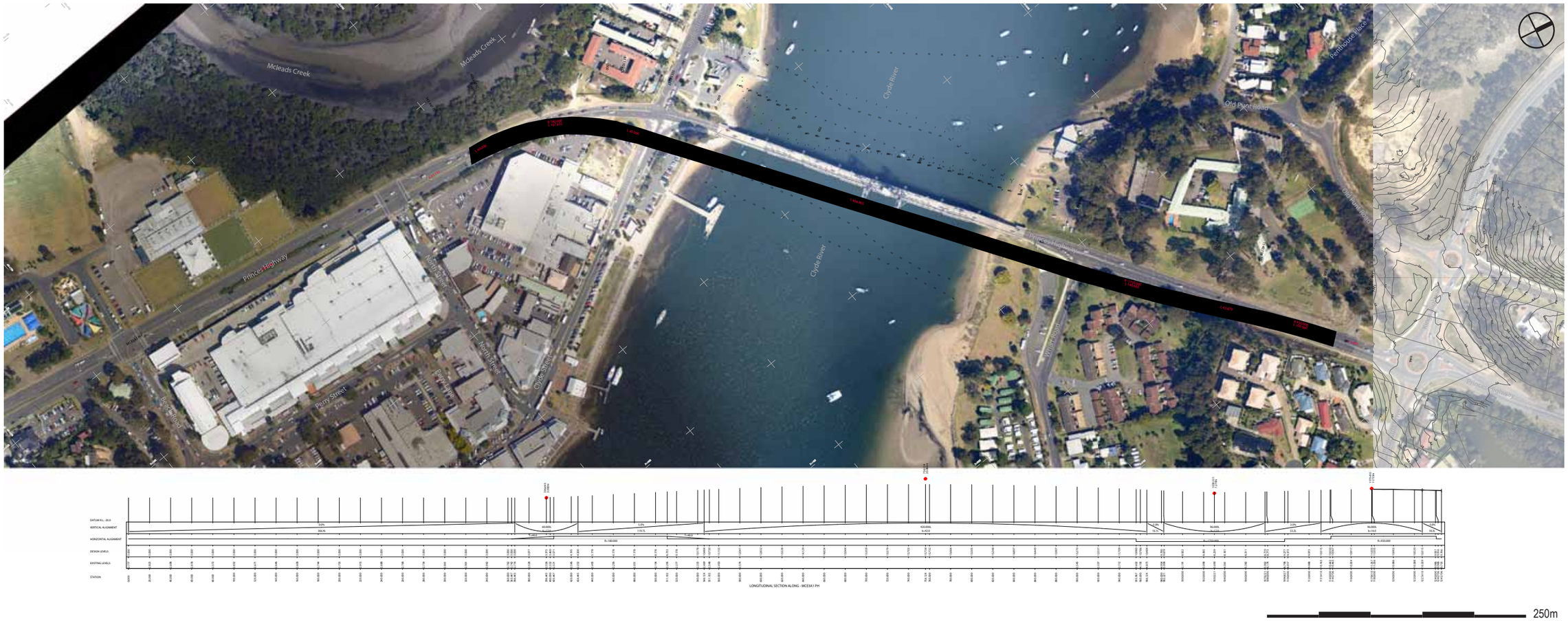


Figure 5.2 Plan illustrating the Eastern Option with a straight alignment. Source: Aurecon

5.2.2 Central Option

The Central Option is situated west of the existing bridge and provides an arched horizontal alignment that sweeps from the northern abutment in an easterly direction to align with the Princes Highway on the southern bank at North Street. The 810M radius locates the horizontal alignment close to the Woolworths Shopping Centre at the southern bank, creating a pinch point. At the northern abutment, the alignment is close to the Princes Highway, thereby limiting impacts to the skyline trees on top of the escarpment.

This option has a good interface at the northern abutment, yet the afore-mentioned pinch point at the southern end is undesirable and raises issues in accommodating the shared use path as part of the regional network.

The alignment of this option interfaces with the existing southern abutment and historic punt ramp, leaving minimal spatial buffers zones between these elements.

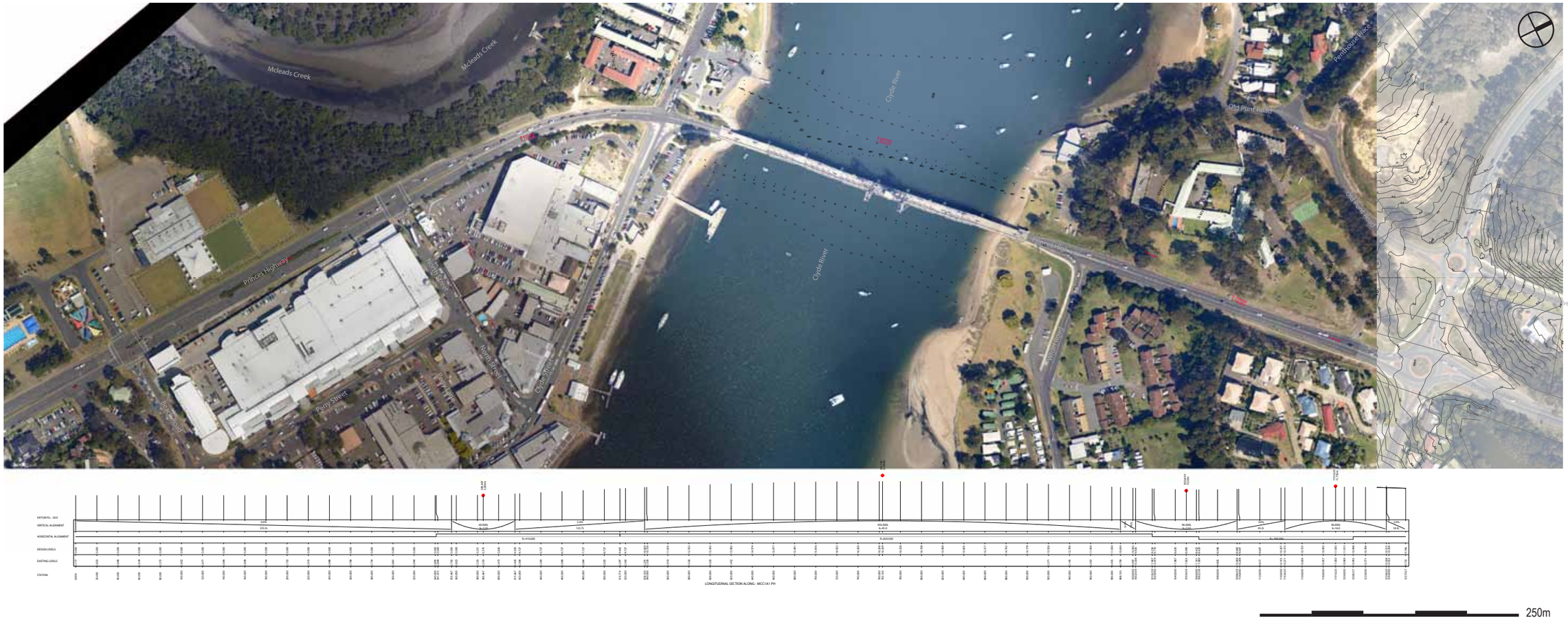


Figure 5.3 Plan illustrating the Central Option, showing a gentle radius in plan. Source: Aurecon

5.2.2 Western Option

A western option was investigated which used a 903M radius, having a lesser sweeping effect. This option also required a different superstructure to the approach span across Clyde Street due to a change in the radius at this point. The mixture of superstructure is undesirable as it creates a visually more complex composition of the overall bridge.

Other negative impacts include that the northern abutment is further to the west, thereby impacting the skyline trees on top of the escarpment and impacting the hotel at the corner of Clyde Street and the Princes Highway.

This option provides some positive outcomes such as a larger buffer zone between the southern abutment of the existing bridge and the new structure. This would be important if parts of the old abutment are recycled as part of a heritage interpretation element.

Also, the shared use path is further away from the Woolworths Shopping Centre, avoiding the afore-mentioned pinch point in the Central Option.

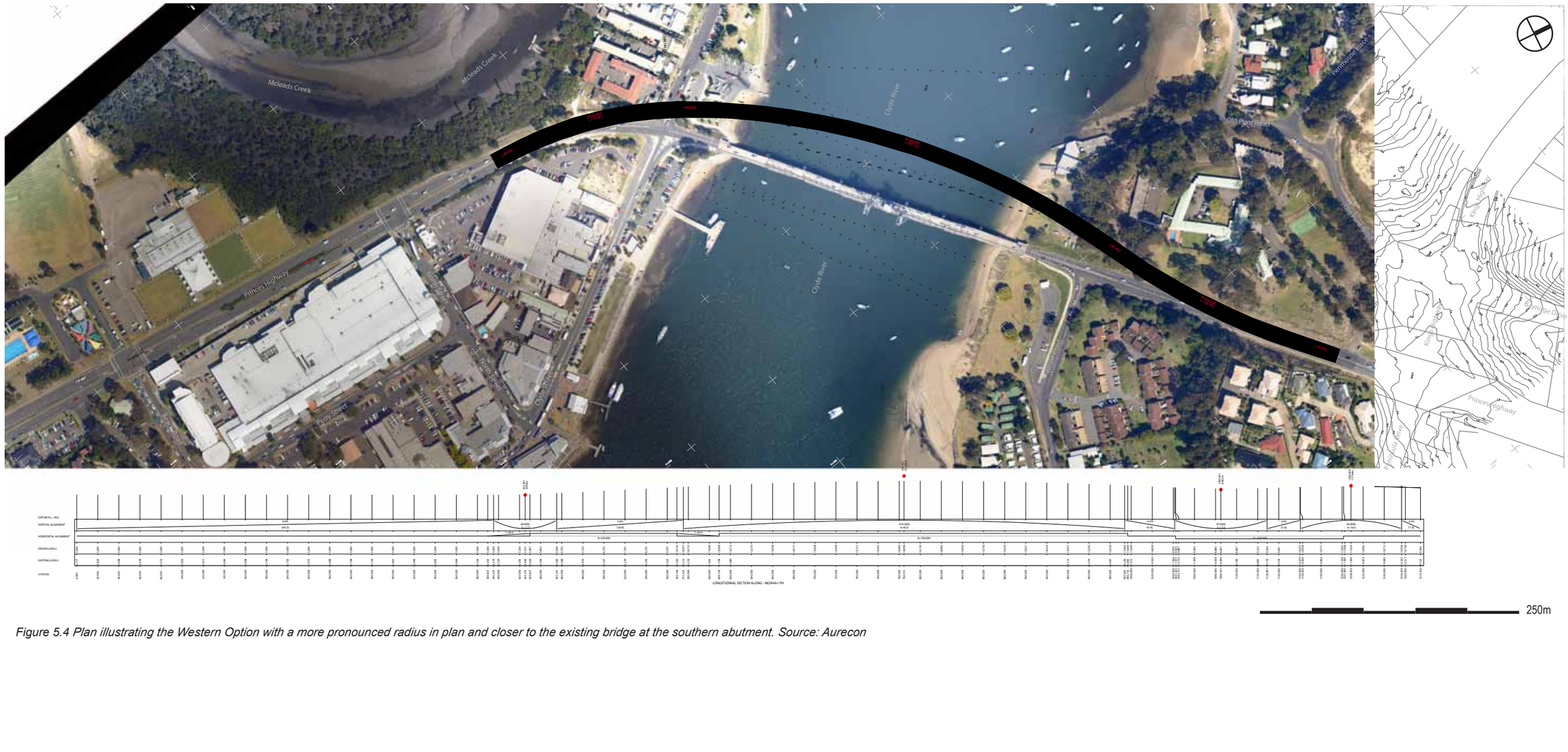


Figure 5.4 Plan illustrating the Western Option with a more pronounced radius in plan and closer to the existing bridge at the southern abutment. Source: Aurecon

5.3 CONSIDERATION OF PIER OPTIONS

It is important to achieve a well proportioned structure whereby the various sub-components contribute to the overall composition of the bridge. Due to the height of the structure, the piers form a principal element as these will be highly visible. Therefore a high quality urban design outcome for these components is important.

Various pier options were investigated based on the afore-mentioned superstructure and deck geometry. The intention of these pier options investigation is to determine key design principles that assist in formulating design guidelines to be adopted in the final design. Hence a variety of pier treatments were evaluated against a base case in the form of a single blade pier with a curved termination or leading edge.

A single blade pier with curved termination

The preferred design, Option 1a is based on a 'V' shape when seen in a cross-sectional elevation. The leading edges are curved to create a more fluid character sympathetic to the maritime setting. A strong vertical reveal has been introduced to articulate the overall mass of the element and create a more sculptural form. The form language responds well to the function of the pier, expressing the movement of forces and its tapered shape minimises its footprint at the waterline and allows for a variety of pier heights.

A number of variants of this scheme were developed and are illustrated overleaf. These include a scheme without the heavy central reveal, a scheme devoid of rounded leading edges and a taper to the outer edges; and a scheme devoid of rounded edges and a taper to the centre.

Option 1a - Preferred

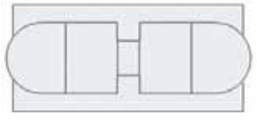
Other schemes include:

- Option 2, also a 'V' shape with a central base
- Option 3 based on two piers joined at the base
- Option 4, an asymmetric design to express the curvature of the horizontal alignment
- Option 5 considered an arched arrangement
- Option 6 that investigated a headstock solution.

All piers have been designed with the intent to appear as close to vertical elements when seen in front elevation. This is to limit potential issues with of maritime traffic envelopes and clearances whilst retaining a consistent pier shape throughout.

SIDE ELEVATION

PLAN VIEW OF PEIR AND PILE CAP

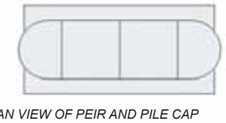


PLAN VIEW OF PEIR AND PILE CAP

Option 1b

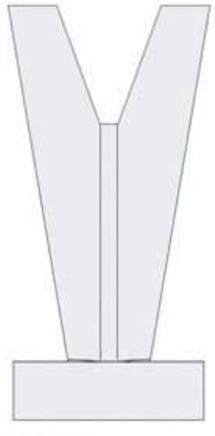
FRONT ELEVATION

SIDE ELEVATION



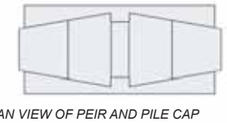
PLAN VIEW OF PEIR AND PILE CAP

Option 1c



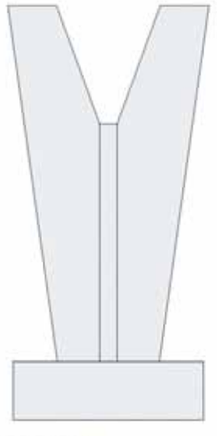
FRONT ELEVATION

SIDE ELEVATION



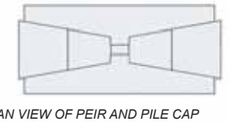
PLAN VIEW OF PEIR AND PILE CAP

Option 1d



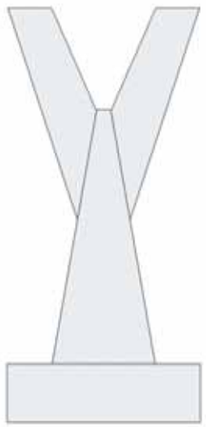
FRONT ELEVATION

SIDE ELEVATION



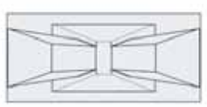
PLAN VIEW OF PEIR AND PILE CAP

Option 2



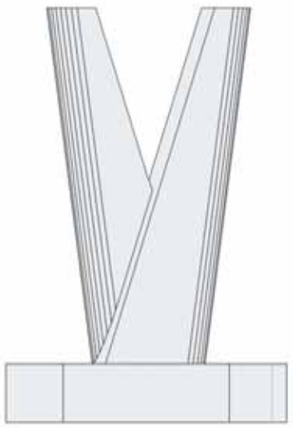
FRONT ELEVATION

SIDE ELEVATION



PLAN VIEW OF PEIR AND PILE CAP

Option 3

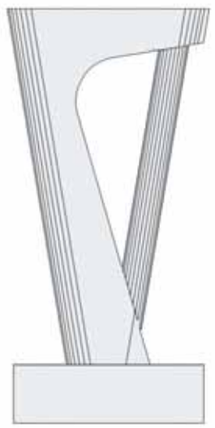


FRONT ELEVATION

SIDE ELEVATION

PLAN VIEW OF PEIR AND PILE CAP

Option 4



FRONT ELEVATION

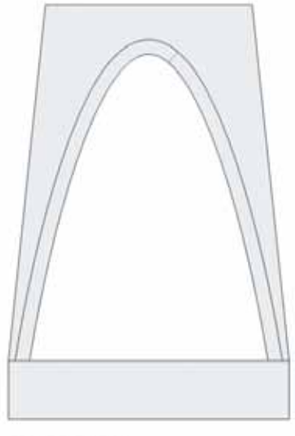
SIDE ELEVATION

PLAN VIEW OF PEIR AND PILE CAP

The following key design principles are considered important in the resolution of the pier:

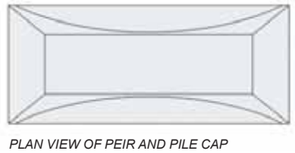
- Keep pier shapes unified and simple
- Introduce curved edges to soften the pier's appearance
- Articulate the mass of the piers through the introduction of reveals and shadowlines
- Taper pier in cross-sectional elevation to minimise its mass
- Retain a slender proportion (width of pier) in front elevation
- Express the movement of forces in the pier.

Option 5



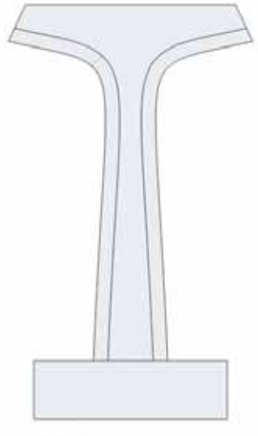
FRONT ELEVATION

SIDE ELEVATION



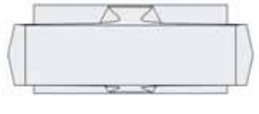
PLAN VIEW OF PEIR AND PILE CAP

Option 6



FRONT ELEVATION

SIDE ELEVATION



PLAN VIEW OF PEIR AND PILE CAP

6.0 PREFERRED OPTION

6.1 THE BRIDGE

A preferred option has been identified during a Value Management Workshop with the objective of selecting a preferred horizontal alignment. The workshop included stakeholder representatives including Council as well as Roads and Maritime and design team representatives.

From the three options presented, the Western Option was selected by the workshop participants as providing the best outcomes within the project's constraints.

The design team has refined this option by eliminating some of the afore-mentioned undesirable outcomes. Key modifications include:

- Reduction of the radius to 600M to achieve a continuos radius up to the western abutment and avoiding the introduction of a separate superstructure typology across Clyde Street
- Refinement of the radius to situate the northern abutment as close as possible to the existing Princes Highway and mitigating the extent of impacts to skyline trees on top of the escarpment will be considered as part of the design development.

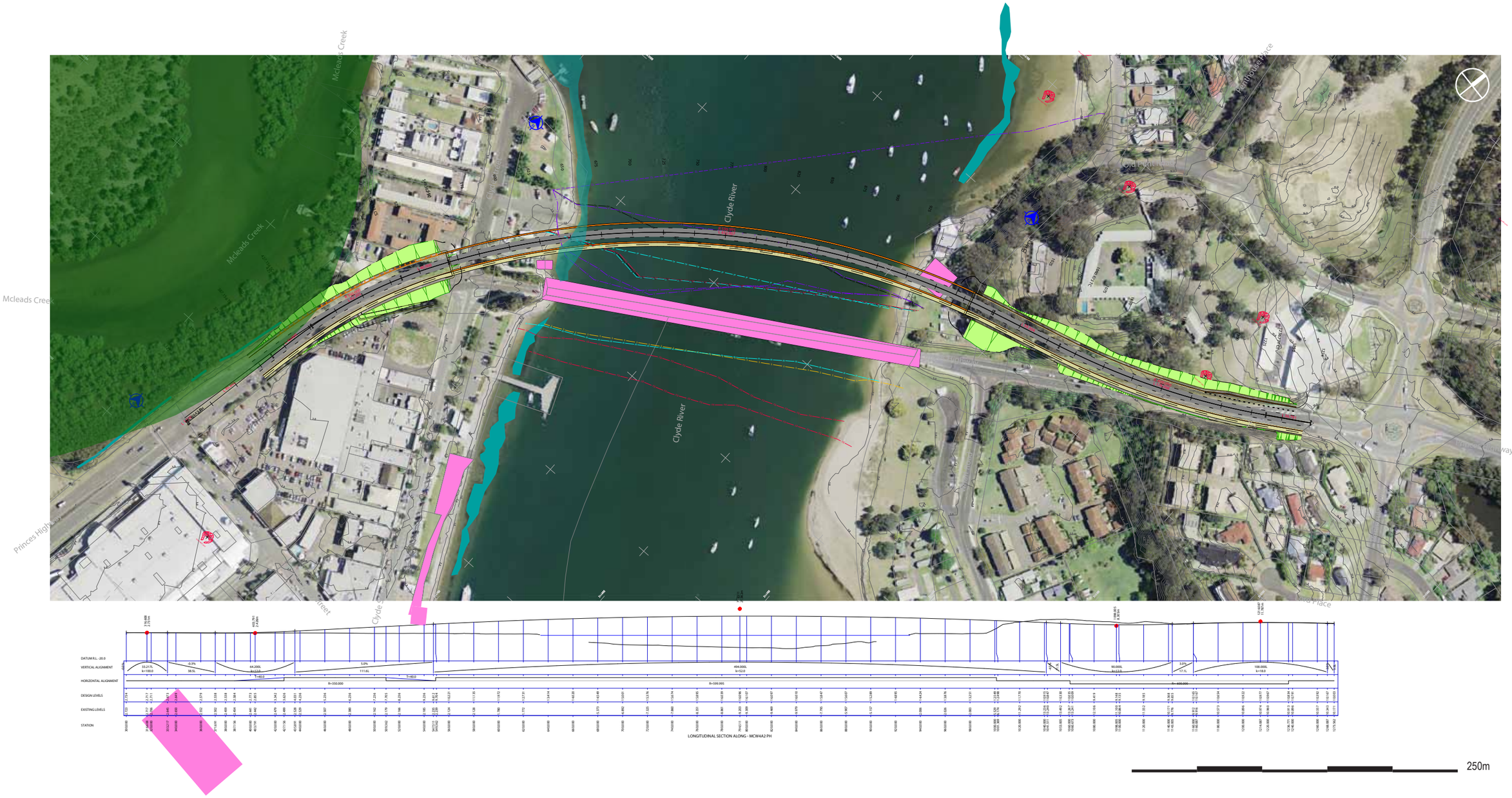


Figure 6.1 Plan illustrating the Eastern Option with a straight alignment. Source: Aurecon

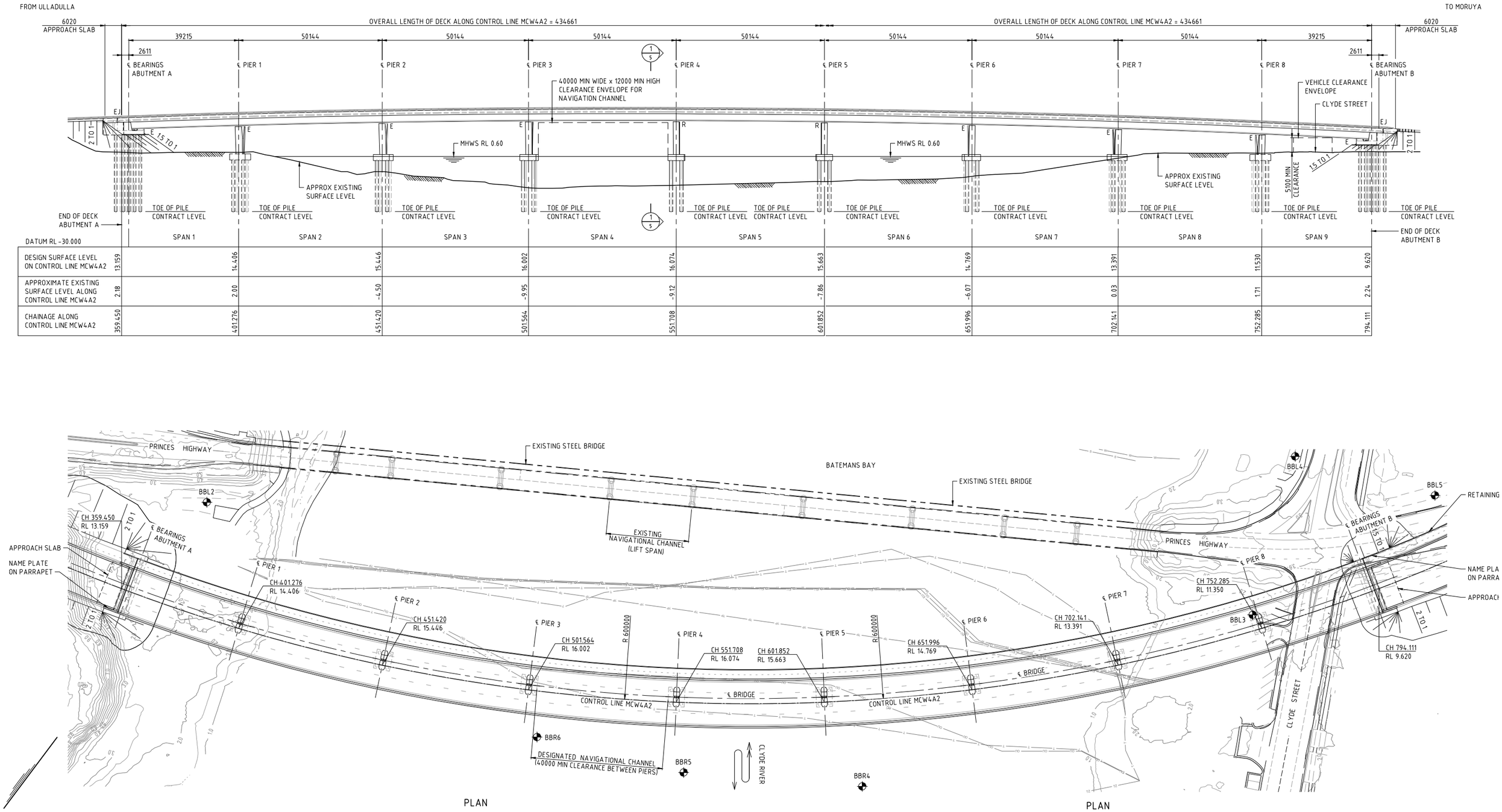
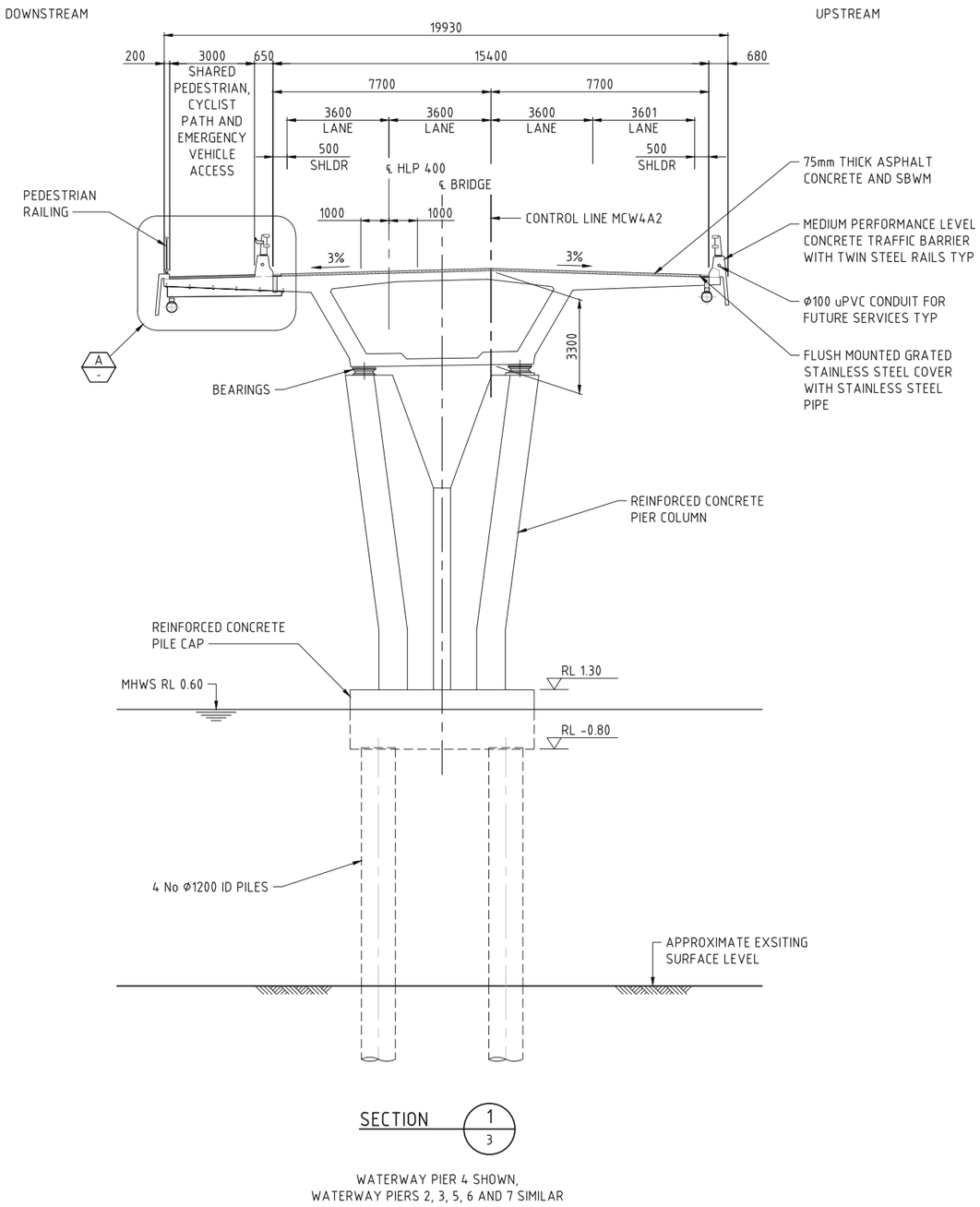
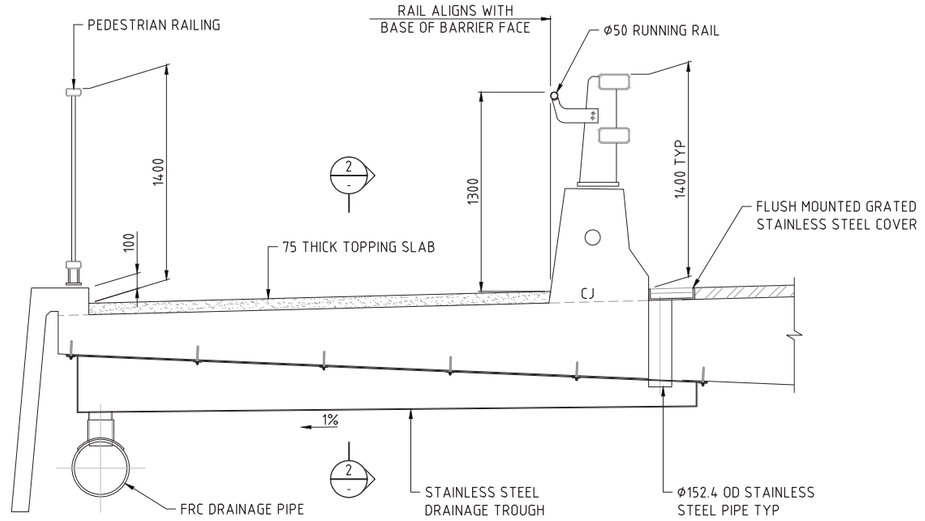


Figure 6.2 Elevation and plan. Scale 1:800. Source: Aurecon



WATERWAY PIER 4 SHOWN,
WATERWAY PIERS 2, 3, 5, 6 AND 7 SIMILAR

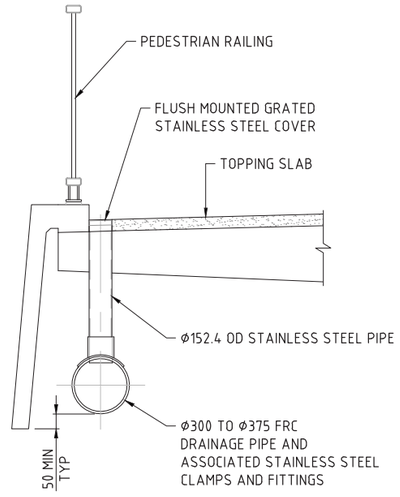
Figure 6.3 Cross section and preliminary details of the drainage system. Source: Aurecon



DETAIL A/-

ROAD DRAINAGE DETAIL

0 400 800 1200mm
400 200



DETAIL A/-

SHARED PATH DRAINAGE DETAIL

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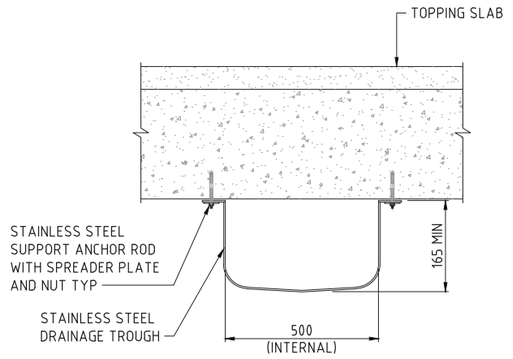
400 200



SECTION 2/-

0 200 400 600mm
200 100

ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK
0	00.00.17	PRELIMINARY ISSUE	DRFTR	CHK

HIGHWAY No 1 — EUROBODALLA SHIRE COINCIL

BRIDGE OVER CLYDE RIVER

AT BATEMANS BAY

GENERAL ARRANGEMENT OPTION 1 - SHEET C

PREPARED BY

aurecon

NSW Transport Roads & Maritime Services

Lighting

Light poles are proposed to be positioned along the traffic barrier between the shared use path and the vehicular traffic lanes. This will avoid the need for corbels along the parapet fascia, ensuring a neat design resolution. The spacing of the light poles are proposed to reflect the rhythm of the structure and these elements should be kept as low as possible to visually mitigate their presence. If required, the shared use path lighting could be complimented by either LED lighting fixtures integrated into the handrail or the traffic barrier.

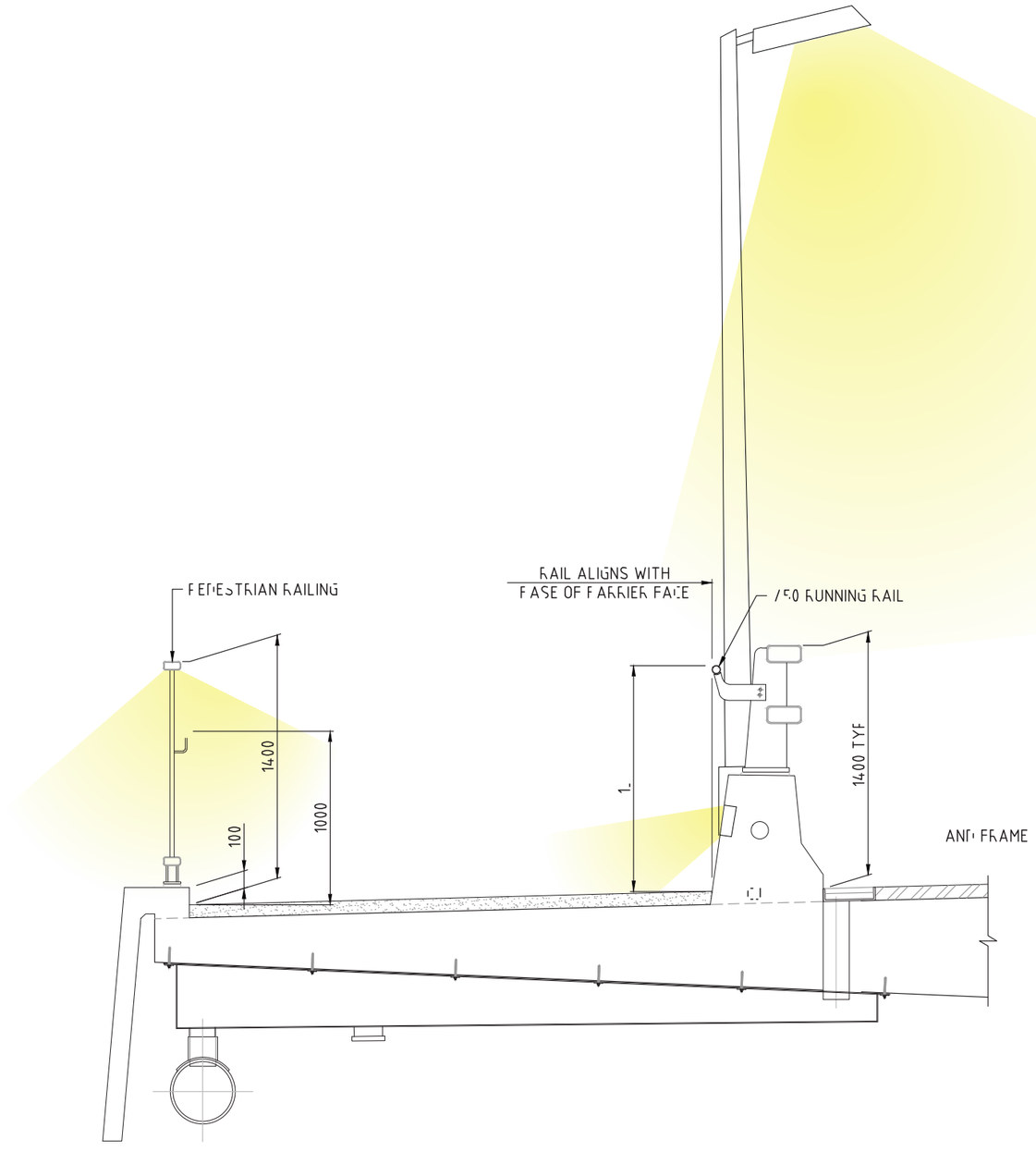


Figure 6.4 Concept for bridge lighting

6.2 THE NORTHERN APPROACH

At the northern approach, the bridge abutment is expressed as a vertical element in the form of a concrete wall with a five degree slope to visually express the escarpment and the rugged topography.

Opportunities

Key opportunities to be considered in the next design stage that are included in the adjacent Urban Design concept plan include:

- Promoting the wider visual opening up the foreshore created by removing the existing embankment to the bridge approach.
- Regrading the section of abandoned road and forming gentle batters and contouring to integrate the bridge with the surrounding landscape.
- Retention of the a small section of the existing bridge abutment / or marking the location of the old bridge, to express it as a historical element that acknowledges the historic crossing. Consideration of integration of heritage interpretation elements within new, picnic or fish cleaning station, in consultation with the community and other stakeholders.
- Installation of a new boat ramp facility on the eastern side that relates to a new boat trailer parking area with improved facilities to complement the southern foreshore boat ramp.
- Provision of additional parking to link with the existing parking lot east of the existing bridge at the end of Wharf Road (refer figure 5.8).
- Planting of tall trees to the bridge abutment to assist in visually mitigating the new structure in the overall landscape.
- Native re-vegetation that reinforces the indigenous plants of the *Grassy Woodland on Coastal Woodlands (*on higher areas) and the *Maritime Grasslands-Spinifex Beach Strand Grassland* to the areas beside the bay to reinforce natural ecologies. Refer to species list in following pages
- Introduction of a riparian zone to the foreshore -suggest a minimal buffer of 20m-30m to allow for the required vegetation riparian zones to foreshores. Thus any new road or carparking should be beyond this zone.
- Maximise use of permeable surfacing (grasscrete or similar) for all new carpark bays and minor road connections to maximise the landscape/ soft character of the foreshore.
- Provision of safe cyclist connectivity from the low point in the bridge to the foreshore in a legible way.
- Integrate water sensitive design strategies as part of the project drainage.
- Integrate an interpretation/art strategy with the community.

Figure 6.5 The removal of the existing bridge approach opens up the opportunity for a visually more continuos foreshore.

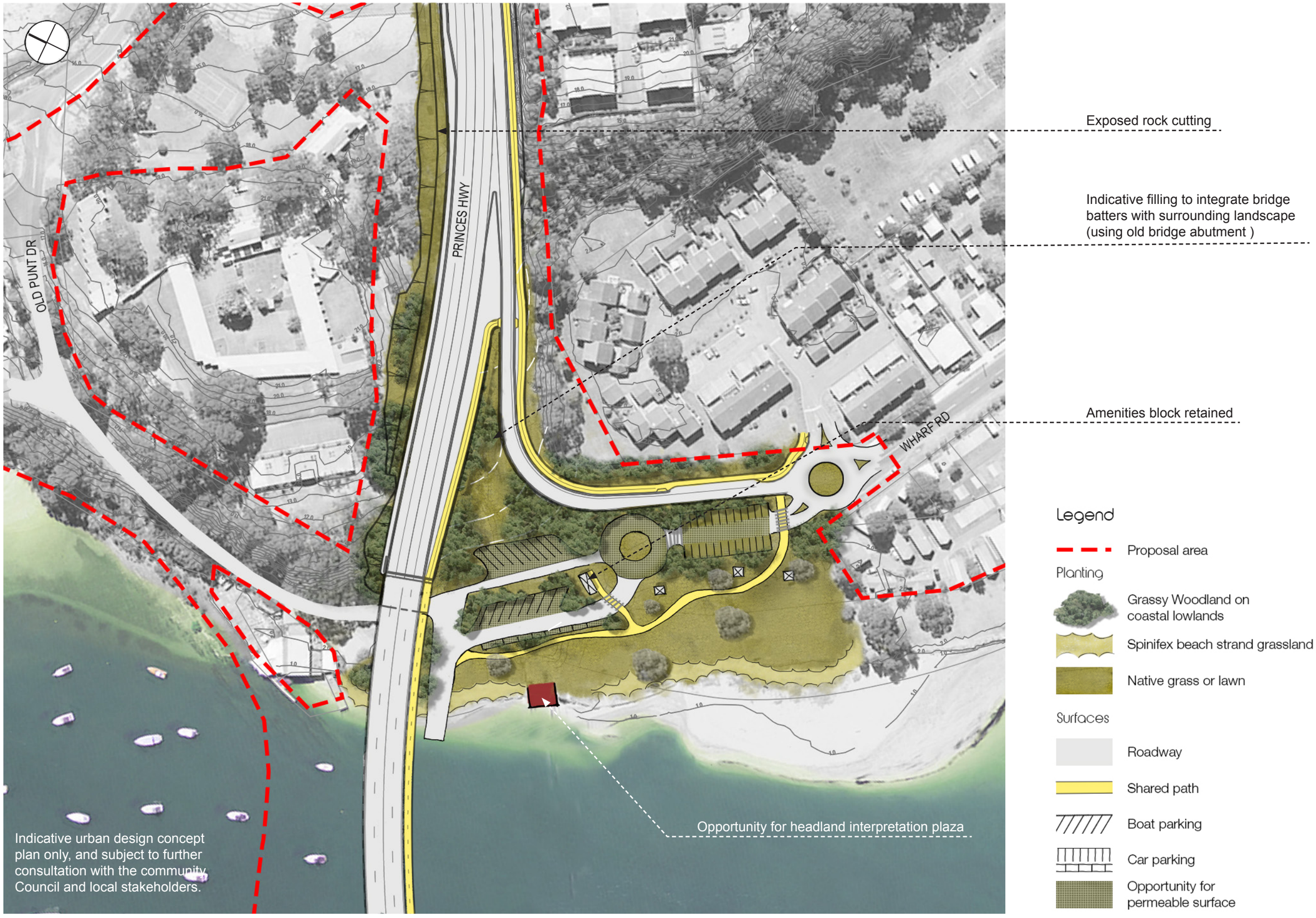


Figure 6.6 Indicative urban design plan for the northern foreshore area.

6.3 THE SOUTHERN APPROACH

At the southern approach, the bridge abutment is expressed with an abutment retaining wall on the south, and spilled batters to the north into the land currently owned by the hotel. The existing boat ramp car park would be modified to introduce a green link from Clyde Street to the foreshore, west of the bridge. The re-configuration of the car park should result in a similar number of parking spaces as is currently provided.

It is important to reinforce the project with a strong urban design concept to create legibility to this part of the project, for the streetscape, and to enhance connectivity from areas south of Clyde Street to the foreshore.

Opportunities

Key opportunities to be considered in the next design stage that are included in the adjacent Urban Design concept plan include:

- Maximise retention of existing trees to assist with visual mitigation- especially the large trees adjacent the existing bridge.
- The introduction of large scale trees to the west and east of the bridge to help settle the structure in its urban environs.
- Partial removal of the existing southern abutment of the bridge to spatially open up the eastern promenade with the boat ramp and park beyond. Extension of the existing promenade along the foreshore to link with the park west of the boat ramp.
- Retention of the remaining landform of the approach to minimise impacts to existing vegetation and to create a grassed ramp towards the river.
- Creation of seating terraces along the promenade that would also mark the old river crossing. Steps could be constructed from recycled parts of the steelworks from the existing bridge.
- Inclusion of a raised threshold along Clyde Street, expressed as a shared zone with feature paving. This raised threshold would link the shared use path leading from the bridge down to the foreshore. A new car park could be integrated adjacent to the shared use path, east of the bridge to replace the existing, as a result of the shared use path ramp.
- Integration and improvement of current open space buffers, and planting of tall trees, around the new bridge for its visual mitigation in the townscape setting, adjacent the “jewel”- i.e. the foreshore.
- With the demolition of the Reef Motor Inn, there is opportunity to explore with Council the option for an improved,new future open space system as part of the town’s structure planning that would create a new north/ south open space buffer to link the ***mangroves (*** *and recreational areas to the west)* ***to the bay*** *(foreshore promenade).*
- Explore opportunity for introducing activity generators in this space to the west of the bridge, for example a cafe that could overlook the mangroves of Mcleods Creek. Consideration of extending the existing boardwalk to extend to the bowling club to create a circuit could provide added recreational value. This proposal, if undertaken would be carefully handled with sensitivity to the EEC vegetation complex
- Explore opportunity to provide a short section of cultural landscape trees to complement existing character of the street, and to mark the bridge location and foreshore park along Clyde Street.
- Introduce indigenous trees and vegetation to reinforce the *Swamp Oak Floodplain Forest*- especially using the Swamp Turpentine and Casuarinas to visually link the potential new future open spaces that would strengthen the ***mangroves to the bay***- north/south link reinforcement of the maritime *Grasslands-Spinifex Beach Strand Grassland* to foreshore edges.
- Assess opportunity to integrate new areas of future shops on the south of Clyde Street to activate the streetscape; any additional carpark requirements need to be carefully assessed and consideration could be given to “permeable/overflow areas” that are otherwise parkland.

Widen the planted buffers to either side of the southern bridge approach to provide adequate mitigation to the bridge and assess options to improve the design of the ramp of the shared use path in conjunction with the development potential of the adjacent property to the east. Adequate screening vegetation

Figure 6.7 View looking east along the southern foreshore. Creating a strong link with the town centre is a key urban design initiative to promote the permeability of the foreshore.

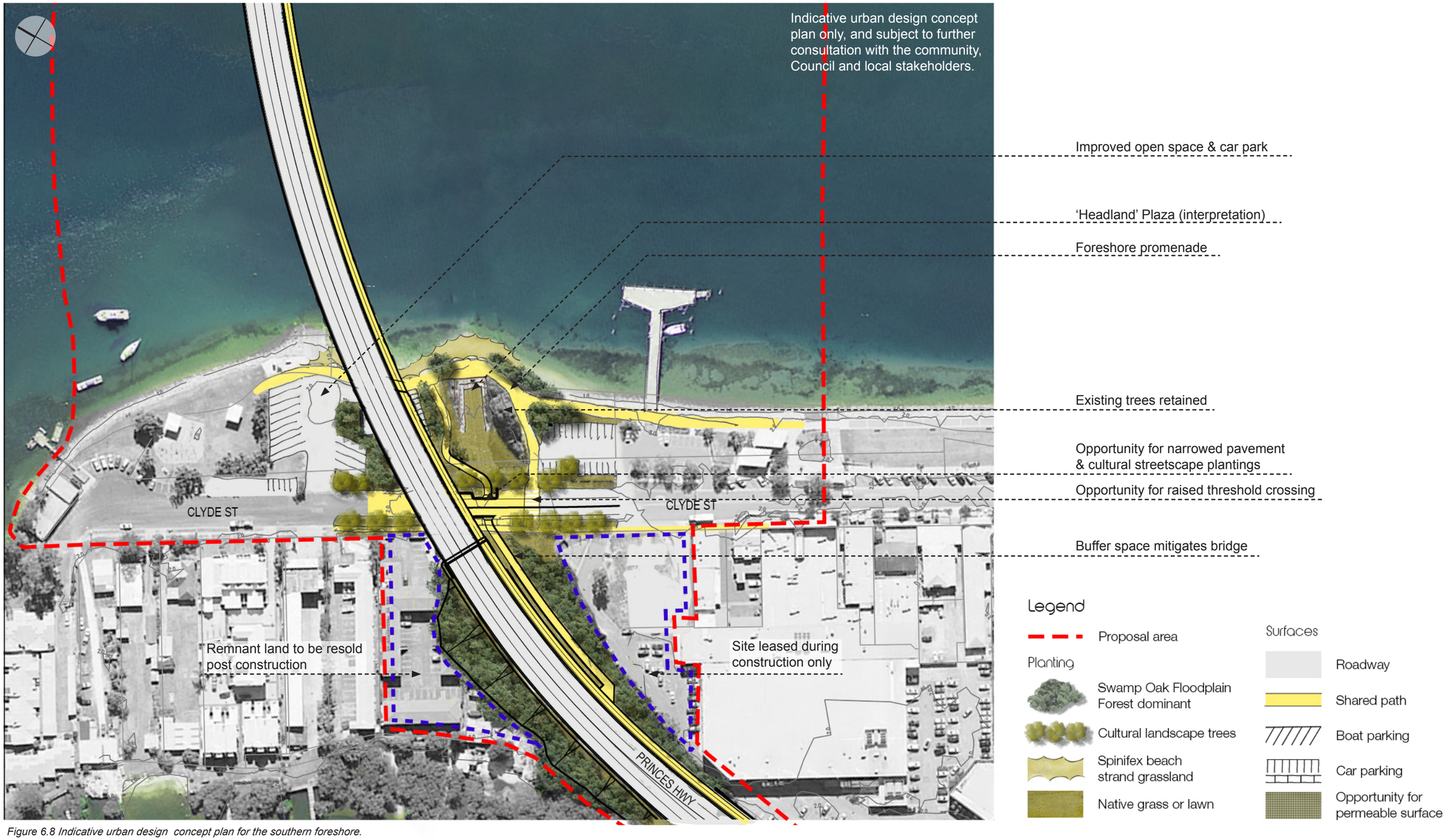


Figure 6.8 Indicative urban design concept plan for the southern foreshore.

6.4 LANDSCAPE DESIGN - PLANTING STRATEGIES

Planting Themes

The re-vegetation/ planting design aims to reinforce the suitable species from the indigenous vegetation communities already present on the site, as illustrated in Figure 6.10.

These associations would adapt well to the site conditions, improve biodiversity, support fauna, and visually mitigate the proposed works in the overall landscape.

The essence of the vegetation associations and proposed main plant species for re-vegetation are illustrated in the adjacent coloured strips, and summarised below. The proposed plant species are preliminary and subject to further refinement during detail design.

Key vegetation communities are:

North Foreshore:

Grassy Woodland on Coastal Woodlands.
This ecological community normally has a projected crown cover greater than 10% and is dominated on site by *E.tereticornis* (Forest Red Gum). *Eucalyptus pilularis* (Blackbutt) and *Corymbia maculata* (Spotted Gum). The composition of the understorey would be shrub with areas of grassy or sedgy groundcover. For the areas in parkland, the groundcovers would be low and with areas of mown grass.

Maritime Grasslands - Spinifex Beach Strand Grassland

This is typically closed tussock grassland with sparse network of long runners on unconsolidated beach sands. These areas could also include small shrubs typical from maritime grasslands that would provide some fauna/bird shelter to the rear or higher areas of the sand dune/ foreshore edge.

Swamp Oak Floodplain Forest
This vegetation community is generally dominated by the Swamp Oak (*Casuarina glauca*) and Swamp Paperbark (*Melaleuca ericifolia*). The community is close to rivers and estuaries and is generally found on soils with a saline influence. This community is present on the lower areas of the southern foreshore. Where appropriate, plantings near the water should reflect this community.

Figure 6.9 Threatened ecological vegetation communities (Source: Batemans Bay Bridge replacement - Biodiversity assessment, Aurecon/RMS, October 2017, p.39)

Figure 6.10 View looking along the foreshore area where Maritime Grasslands have been indicated in the adjacent vegetation map. Note the existing trees beyond; the higher areas of the grasslands could also include shrubs as listed below.

Figure 6.11 View looking toward the Grassy Woodland on Coastal Woodlands community on the ridgeline beyond the southern foreshore

Maritime Grasslands - Spinifex Beach Strand Grassland

Grasses / Groundcovers	
Atriplex cinerea	Grey Saltbush
Carpobrotus glaucescens	Pigface
Isolepis nodosa	Knobby Club-Rush
Lomandra longifolia	Spiny-Headed Mat-Rush
Poa poiformis	Coast Tussock-Grass
Spinifex sericeus	Hairy Spinifex
Sporobolus verginicus	Marine Couch
Themeda australis	Kangaroo Grass
Zoysia macrantha	Prickly Couch
Shrubs	
Banksia integrifolia subso. integrifolia	Coastal Banksia
Hibbertia serpyllifolia	Guinea Flower
Leucopogon parviflorus	Coastal Bearded-Heath
Pultenaea maritima	Bacon and Eggs
Westringia fruiticosa	Coastal Rosemary

Grassy Woodland on Coastal Lowlands

Trees

Angophora floribunda	Rough-Barked Apple
Corymbia maculata	Spotted Gum
Eucalyptus amplifolia ssp. amplifolia	Cabbage Gum
Eucalyptus bosistoana	Coast Grey Box
Eucalyptus botryoides	Bangalay
Eucalyptus eugenioides	Thin-Leaved Stringybark
Eucalyptus globoidea	White Stringybark
Eucalyptus longifolia	Woollybutt
Eucalyptus paniculata ssp. paniculata	Grey Ironbark
Eucalyptus pilularis	Blackbutt
Eucalyptus quadrangulata	Coastal White Box
Eucalyptus tereticornis	Forest Red Gum

Shrubs

Breynia oblongifolia	Coffee Brush
Leucopogon juniperinus	Prickly Beard-Heath
Leptospermum polygalifolium	Yellow Tea Tree
Ozothamnus diosmifolius	Rice Flower
Pittosporum undulatum	Sweet Pittosporum

Grasses / Groundcovers

Carex longebrachiata	Drooping Sedge
Cymbopogon refractus	Barbed Wire Grass
Dianella longifolia	Flax Lily
Echinopogon caespitosus	Bushy Hedgehog Grass
Entolasia stricta	Wiry Panic
Eragrostis leptostachya	Paddock Love Grass
Imperata cylindrica	Blady Grass
Lepidosperma laterale	Variable Sword-Sedge
Microlaena stipoides	Weeping Grass
Pratia purpurascens	Whiteroot
Poa labillardieri	Tussock Grass
Themeda australis	Kangaroo Grass

Trees

Angophora floribunda 'Rough Barked Apple' | *Corymbia maculata* 'Spotted Gum' | *Eucalyptus botryoides* 'Bangalay' | *Eucalyptus eugenioides* 'Thin-Leaved Stringybark' | *Eucalyptus tereticornis* 'Forest Red Gum'

Shrubs

Breynia oblongifolia 'Coffee Brush' | *Leucopogon juniperinus* 'Prickly Beard-Heath' | *Leptospermum polygalifolium* 'Yellow Tea Tree' | *Ozothamnus diosmifolius* 'Rice Flower' | *Pittosporum undulatum* 'Sweet Pittosporum'

Grasses / Groundcovers

Carex longebrachiata 'Drooping Sedge' | *Dianella longifolia* 'Flax Lily' | *Microlaena stipoides* 'Weeping Grass' | *Poa labillardieri* 'Tussock Grass' | *Themeda australis* 'Kangaroo grass'

Swamp Oak Floodplain Forest

Trees

Alphitonia excelsa	Red Ash
Casuarina glauca	Swamp Oak
Cupaniopsis anacardioides	Tuckeroo
Lophostemon suaveolens	Swamp Turpentine
Melaleuca ericifolia	Swamp Paperbark
Melaleuca quinquenervia	Broad Leaved Paperbark
Melaleuca styphelioides	Prickly-Leaved Tea Tee

Small Trees & Shrubs

Acmena smithii	Lilly Pilly
Callistemon salignus	Sweet Willow Bottlebrush
Glochidion ferdinandi	Cheese Tree
Glochidion sumatranum	Umbrella Cheese Tree
Homalanthus populifolius	Bleeding Heart
Melaleuca alternifolia	Narrow-Leaved Paperbark
Myoporum acuminatum	Boobialla

Grasses / Groundcovers / Ferns

Baumea juncea	Bare Twig Rush
Blechnum indicum	Swamp Water-Fern
Carex appressa	Tall Sedge
Cynodon dactylon	Sand Couch
Crinum pedunculatum	Swamp Lily
Dianella caerulea	Blue Flax Lily
Entolasia marginata	Bordered Panic
Gahnia clarkei	Tall Saw-Sedge
Hypolepis muelleri	Harsh Ground Fern
Imperata cylindrica var. major	Blady Grass
Isolepis inundata	Swamp Club-Sedge
Juncus kraussii subsp. australiensis	Sea Rush
Juncus usitatus	Common Rush
Lobelia anceps	Angled Lobelia
Lomandra longifolia	Spiny-Headed Mat-Rush
Phragmites australis	Common Reed
Viola banksii	Violet

Trees

Casuarina glauca 'Swamp Oak' | *Cupaniopsis anacardioides* 'Tuckeroo' | *Lophostemon suaveolens* 'Swamp Turpentine' | *Melaleuca ericifolia* 'Swamp Paperbark' | *Melaleuca quinquenervia* 'Broad Leaved Paperbark'

Small Trees & Shrubs

Acmena smithii 'Lilly Pilly' | *Callistemon salignus* 'Sweet Willow Bottlebrush' | *Glochidion ferdinandi* 'Cheese Tree' | *Melaleuca alternifolia* 'Narrow-Leaved Paperbark' | *Myoporum acuminatum* 'Boobialla'

Grasses / Groundcovers / Ferns

Carex appressa 'Tall Sedge' | *Dianella caerulea* 'Blue Flax Lily' | *Hypolepis muelleri* 'Harsh Ground Fern' | *Juncus usitatus* 'Common Rush' | *Lomandra longifolia* 'Spiny- headed Mat-rush'

Roads & Maritime

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7.0 LANDSCAPE CHARACTER IMPACT ASSESSMENT

Based on the concept design, the following impact assessment has been undertaken based on RMS's *Environmental Impact Assessment Practice Note - Guidelines for Landscape Character and Visual Impact Assessment No. EIA-N04, Version 2.0 Issue (2013).*

The landscape character impact is based on the aggregate of an area's built, natural and cultural character and sense of place. In this regard, it is measured by the combination of the area's sensitivity and the magnitude (scale, character and distance).

The magnitude of impact refers to the type of proposal and its compatibility with the existing landscape character. Factors such as visual contrast, scale, location or setting all influence the magnitude that the proposal may have on its surroundings.

The magnitude impact rating also considers whether the proposal has a positive or negative impact on the landscape character. For example, a proposal may be of a large scale, yet could positively impact how an area functions or improve its sense of place, providing beneficial outcomes

Table 7.1 illustrates how the level of sensitivity and magnitude are combined to achieve an overall level of impact for both the landscape character impact and the visual impact. It should be noted that the ratings are measured relative to each other, rather then being assigned through an absolute scale. Hence the resulting landscape character impact rating is project specific and identifies those areas with the highest and lowest impacts.

The sensitivity of each landscape character zone has been assessed in Section 03 - Landscape Character Analysis and has been included in the assessment tables 7.2 and 7.3 overleaf.

Sensitivity \ Magnitude	high	moderate	low	negligible
high	high impact	high- moderate	moderate	negligible
moderate	high- moderate	moderate	moderate-low	negligible
low	moderate	moderate-low	low	negligible
negligible	negligible	negligible	negligible	negligible

Table 7.1 Visual Impacts Rating Table, example illustrating the resulting impact as a combination of sensitivity and magnitude.

LANDSCAPE CHARACTER ZONE	SENSITIVITY LEVEL	MAGNITUDE OF CHANGE	LANDSCAPE CHARACTER IMPACT
ZONE A - RIVERS AND CREEKS	High: sensitive environs with a high visual and environmental quality that provides recreational space and an open character for the local community.	Moderate: whilst most areas of the waterways and creek setting would not be disturbed, the new bridge would have a strong presence in the general setting. This is due to the scale and height of the proposal influencing the sense of place. It should be noted, that the functioning of the waterways would remain similar to the existing situation. The more generous channel crossing under the bridge would enhance the experience and safety for boat users. The recreational value of the waterways would be retained, hence the limited magnitude of change.	Moderate to high: the proposal would influence the visual amenity of this zone which is a key contributor to the identity and sense of place. The proposal would also enhance the functioning of this zone for maritime traffic. Hence, the proposal would have adverse and beneficial impacts to this zone. Key mitigating strategies include the provision of generous span lengths to limit the number of piers in the waterway. Introducing a form language that is neat and simple to create an understated character.
ZONE B - WETLANDS	High: pristine environs with high value environmental quality that reinforces the overall sense of place of the township.	Negligible: the project would have a very limited impact to this zone, as it has a limited interface with the proposal. The introverted character of this zone further helps to limit any impacts.	Negligible: no noteworthy impact identified as a result of the proposal. However, the proposal has the potential to make this natural environs potentially more present or accessible from the urban areas/town centre.
ZONE C - THE HILL	High: upper slopes above the escarpment. Limited interface with the riverside. Bushland and Residential land use.	Moderate: although pockets of this zone (the motel and other properties situated on top of the escarpment directly west of the Princes Highway) interface with the proposal, the overall magnitude of change for this zone is negligible due to the remoteness to the project. It should be noted however, that for the properties on top of the escarpment, noise impacts would be likely and may be mitigated by noise barriers. This could impact the sense of place of these properties by creating a spatially more enclosed character. In addition, the removal of escarpment vegetation would adversely impact the treed quality of the site surrounding these properties. Hence a moderate magnitude of change has been assessed for this zone.	Moderate to high: for a number of properties on top of the escarpment, the proposal would impact the character of its surroundings due to the moderate interface with the road. For most of this zone, the proposal would have a limited impact. Key mitigating strategies considered in the design include minimising vegetation clearing, re-establishing stands of trees and introducing screening vegetation where appropriate.
ZONE D - WRAY BAY	High: established residential land use that visually interfaces with the Clyde River.	Moderate: the new bridge would be different in height and width to the existing structure, contributing to a more prominent and dominant bridge. Although this would affect some of the panoramic views enjoyed by numerous residences, the waterway setting in the fore- and mid-ground will continue being the dominant feature of these panoramic vistas. It should be noted though that in this case, the panoramic vistas are not only a visual aspect, but these also contribute to the identity, character and sense of place for these residences. It is for this reason that they have been considered within the landscape character impact assessment.	Moderate to high: a number of residences would have their panoramic views affected, influencing the sense of place in a limited way. Key mitigating strategies considered in the design include the potential use of oxides in the concrete to recede its presence and introducing generous spans to create a less busy character.
ZONE E - NORTHSHORE LINK	High: valued scenic and recreational space for the community.	Moderate: the project would provide some positive effects to the foreshore by improving its permeability and extending some of the parklands. The overall open character of this zone limits the impact of the proposal to the character of this zone. Although the scale of the proposed structure would be more dominant, the improvements to the foreshore are considered beneficial, enhancing the functioning of the area and de-emphasising through traffic.	Moderate to high: the proposal would bring benefits to the foreshore. A key mitigation measure considered in the design includes the creation of new parklands where the existing northern approach of the bridge is situated. The key elements include expanded car parking at the foreshore, a viewing deck and other facilities.

LANDSCAPE CHARACTER ZONE	SENSITIVITY LEVEL	MAGNITUDE OF CHANGE	LANDSCAPE CHARACTER IMPACT
ZONE F - RESIDENTIAL HIGHLAND	High: established residential land use.	Negligible: the proposal would have a minimal impact on this zone. The proposal may enhance the connectivity into town, yet this zone would not change in character, how it functions or its sense of place.	Negligible: no impact identified as a result of the proposal.
ZONE G - RESIDENTIAL LOWLAND	High: the residential/holiday accommodation land use in close proximity to the river foreshore makes this zone sensitive to change.	Negligible: the sense of place and identity of this zone is only marginally impacted. Although some panoramic views may be affected by the replacement of the bridge, this change has a limited effect on the sense of place of this zone which would retain its strong context to the foreshore.	Negligible: the impact of the proposal on this zone is considered minimal. The improved foreshore adjacent to this zone is seen as a positive development.
ZONE H - THE PROMENADE	High: prominent stretch of foreshore that is popular for the community and a key urban element of the town.	Moderate: the proposal would affect the foreshore promenade in two distinct ways. The larger scale of the proposed bridge would make it more prominent, emphasising traffic related infrastructure from various vantage points. However by removing traffic at grade and opening the foreshore, traffic would be de-emphasised in the vicinity of the southern abutment of the existing bridge.	Moderate to high: the proposal would have positive and negative effects, both of them contributing to the moderate magnitude of impact and resulting in a moderate to high impact due to the high sensitivity of this zone. Mitigating strategies considered in the design include extending the foreshore promenade and introducing parkland spaces in the vicinity of the existing southern bridge abutment.
ZONE I - SPORTS FACILITIES & BOWLING CLUB	Moderate: the somewhat introverted character of this zone limits the sensitivity.	Negligible: the project would have a minimal effect to this zone due to the limited interface with the proposal. It should be noted however, that the proposal may enhance the accessibility for visitors to this zone from the north.	Negligible: no noteworthy impact identified as a result of the proposal.
ZONE J - BATEMANS BAY TOWN CENTRE	High: the town centre is susceptible to change due to its importance as an attractive hub for visitors and the community alike.	Moderate: most of this zone would experience a negligible change in character as a result of the proposal. However, the northwest area of this zone would be strongly impacted by a number of changes that affect its character and functioning. The grade separation of the highway changes the overall streetscape character of this area, creating a more pedestrianised zone that enhances the amenity and permeability from the town centre to the foreshore. This change would also impact the accessibility to the existing boat ramp, making it more difficult to access via North Street. Increased traffic along North Street would create a more congested environment, somewhat changing the character of this street as well. Pedestrian access from the bridge to the foreshore is considered important and careful consideration is required in terms of its spatial and visual integration and its visual surveilance.	Moderate to high: The proposal would impact the way the northwest area of the town centre functions. The proposal would provide some key benefits for the general functioning and perceived character of the centre with the main adverse impact being the introduction of additional traffic along North Street. Key mitigation strategies include the improved boat ramp facilities on the northern foreshore, streetscape measures along Clyde Street. Ensure the creation of adequate open space buffers adjacent to the southern abutments to allow an improved visual and spatial integration with the new bridge abutment and batters and for the shared use path leading to the bridge.
ZONE K - BATEMANS BAY	High: due to the residential land use.	Negligible: no effects have been identified to this zone as a result of the proposal.	Negligible: no impact identified as a result of the proposal.
ZONE L - FOREST	High: scenic natural environment in pristine condition that is highly susceptible to change.	Negligible: there overall character and sense of place of this zone would be retained.	Negligible: the integrity of this zone is not being impacted.

SUMMARY OF LANDSCAPE CHARACTER IMPACTS

The adjacent table 7.2, summarises the landscape character impacts assessed for each zones. The identified impacts are either in the negligible category or moderate to high impact rating. This is clearly driven by the high sensitivity of each zone, confirming the scenic and environmental qualities of the general area.

It should be noted, that in a number of instances, the proposal provides new opportunities for the general setting, such as the pedestrianisation of the town centre's foreshore, the improved permeability of the foreshore along the river, the introduction of new open space and parklands and the enhancement of streetscapes.

These proposed landscape/urban design initiatives will provide effective mitigation to the proposal. In this regard, the moderate to high impact on a few zones is partially driven by the benefits the proposal offers.

Character zones		Sensitivity	Magnitude	Impact
A	River & Creeks	High	Moderate	Moderate to High
B	Wetland	High	Negligible	Negligible
C	The Hill	High	Moderate	Moderate to High
D	Wray Bay	High	Moderate	Moderate to High
E	North Shore Link	High	Moderate	Moderate-High
F	Residential High Land	High	Negligible	Negligible
G	Residential Low Land	High	Negligible	Negligible
H	The Promenade	High	Moderate	Moderate-High
I	Sport Facilities & Bowling Club	Moderate	Negligible	Negligible
J	Batemans Bay Town Centre	High	Moderate	Moderate-High
K	Batemans Bay	High	Negligible	Negligible
L	Forest	High	Negligible	Negligible

Table 7.2 Landscape Character Assessment summary table

8.0 VISUAL IMPACT ASSESSMENT

8.1 VISUAL ENVELOPE

In order to assess the visual impact, a Visual Envelope Map of the project's visual catchment from the surrounding area has been proposed. The visual catchment is defined either by topographical features, waterscape, built form and vegetative screening.

The visual exposure of the project is extensive due to the open expanse of water being the main physical element, and the low nature of the topography, with little undulations in height at the shoreline.

Ten viewpoints have been selected and assessed with photos- indicating before and after (with an indicative red line) delineating the approximate location and height of the new bridge for each view.

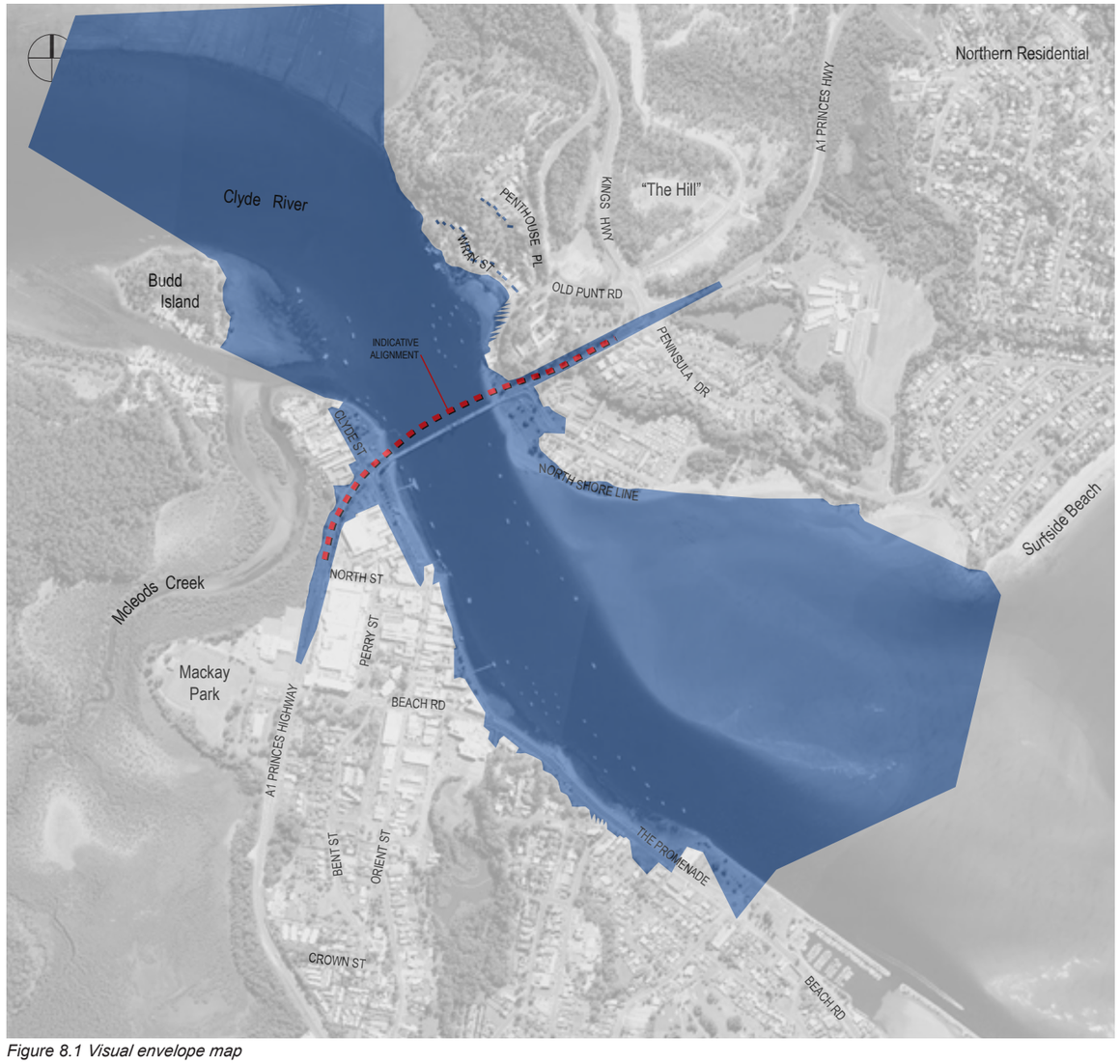

Figure 8.1 Visual envelope map

Figure 8.2 View from Wray Bay looking south across the water towards the new bridge.

Figure 8.3 After- with indicative line showing height of new bridge elevation

VIEWPOINT 1	
Description of the setting	Wray Bay, a popular recreational spot, with residences behind.
Element visible of the project	Open views of the higher bridge rising above the water. (note existing views of the existing bridge with the two high towers protruding into the skyline, with the rest of the bridge sitting below the skyline)
Category of viewer	Residents and recreational/tourist users
Nature of impact	Adverse, the new bridge would be a more dominant element in the setting.
Visual sensitivity	High due to the viewers enjoying natural waterscape views of the Clyde River across to the township of Bateman's Bay.
Magnitude of change	Moderate. The alignment sits above the existing bridge and will contrast against the sky and define the new skyline. The removal of the existing bridge would provide some improved visual permeability towards the township. At night time, the higher elevation of the bridge would make lighting more prominent, resulting in a high visual effect.
Overall rating of visual impact	Moderate - high: the proposal would become a new feature in the setting,creating with its height, a dominant element. At night time, the bridge would dominate the mid-ground, with higher light fixtures than the current view.
Comment / mitigation measures	The limitation of the overall height of the bridge would assist in limiting visual impacts. The height of the structure is critical to resulting visual impacts. Locating light fixtures on the western side and tilting them away from the viewer would help mitigate the exposure of those elements. Situate fixtures on the western side only. Consider the use of darker colours/oxides to visually recede the concrete structure. Keep light poles as low as possible.

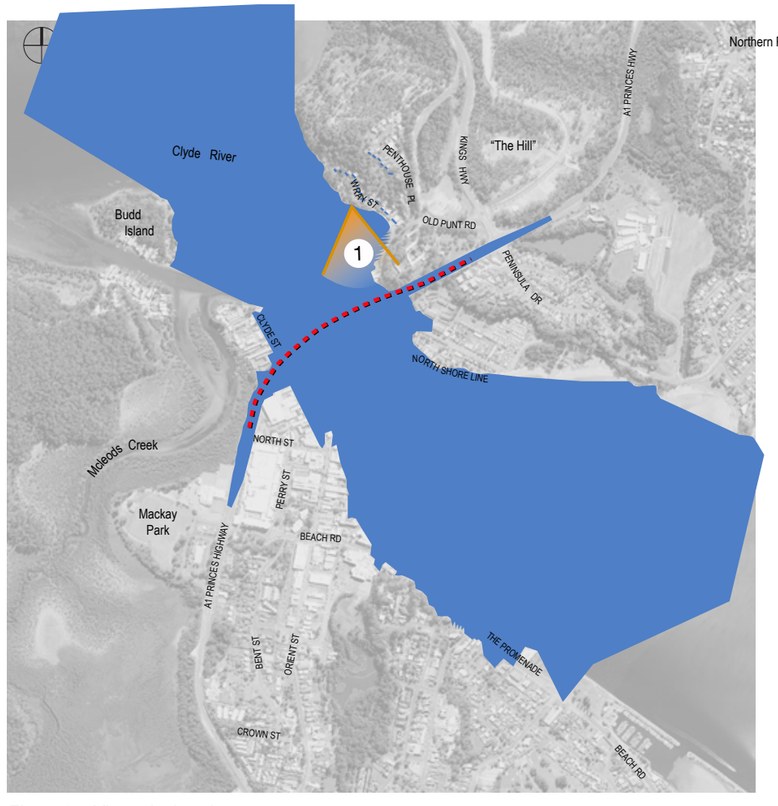

Figure 8.4 Viewpoint location.

Figure 8.5 View from near the boat ramp on the north west foreshore looking south west across the bay to the township.

Figure 8.6 After view showing the indicative alignment of the new bridge

VIEWPOINT 2	
Description of the setting	End of Old Punt Road, from the carpark near the heritage ramp
Element visible of the project	Bridge will be higher than the existing but the existing embankment will be removed to open up views along the shoreline.
Category of viewer	Recreational users, boat ramp users, restaurant users- tourists.
Nature of impact	Adverse
Visual sensitivity	Moderate due to the nature of the land use as a car park and boat ramp facility, set in a otherwise foreshore zone of high importance.
Magnitude of change	High as the bridge would be a major and higher element in the foreground foreshore setting, despite the opening of the foreshore visually to the south. (The high magnitude of change is underpinned by the higher built form of a new bridge protruding into the skyline) There would be a new embankment at this location, south of Clyde Street that would impact the view.
Overall rating of visual impact	Moderate - high: the moderate sensitivity limits the overall visual impact, driven by its land use.
Comment / mitigation measures	Mitigation plantings include planting tall trees to settle the bridge structure into the land, beyond the embankment, urban design treatments of the embankment and adjacent areas to mitigate its scale, and attention to carpark/road layouts to maximise open space buffers around the foreshore.

Figure 8.7 Viewpoint location.

Figure 8.8 View from just west of the northern embankment looking south west across the bay to the township and distant ranges

Figure 8.9 After view showing the indicative alignment in the setting.

VIEWPOINT 3	
Description of the setting	From the high hill on the northern foreshore where the new bridge and approach would be
Element visible of the project	Views towards the new bridge with filtered views from nearby cabins/hotel complex to the bridge
Category of viewer	Property owners and Bay Waters hotel guests to the eastern side of the approach bridge
Nature of impact	Adverse
Visual sensitivity	Moderate - the hotel guests are of a somewhat transient nature and the views are limited in their panoramic nature.
Magnitude of change	High - this area would become the approach to the bridge, strongly transforming this view, including night time.
Overall rating of visual impact	High- moderate
Comment / mitigation measures	Vegetative screen planting and large scale tree planting are important as a mitigation measure to minimise any visual glare a night time.

Figure 8.10 Viewpoint location.

Figure 8.11 View the beach in front of the park on the north east foreshore looking north- with the existing bridge embankment in the foreground.

Figure 8.12 After view showing the indicative alignment of the new bridge and abutment that would open up views along the foreshore.

VIEWPOINT 4	
Description of the setting	Beach in front of the foreshore park.
Element visible of the project	New bridge higher than the existing, and further away in distance. The new bridge settles into the treed backdrop on the right, and will significantly open up the foreshore visually, with removal of the existing bridge embankment.
Category of viewer	Tourists, recreational users, residents,caravan park users.
Nature of impact	Adverse
Visual sensitivity	High, due to popular foreshore park used by locals and visitors alike. It should ne noted that the proposed future use would limit the sensitivity to moderate, as this area would be used as part of a boat ramp and carparking area.
Magnitude of change	High, the area would strongly change in both function and visual character. Currently this space is open space, soft landscape with a heavily treed landscape. It will become more urbanised with a higher bridge, and more carparking/ boat access to the water that will impact upon the informal foreshore character/visual sense. The removal of the existing bridge and the enhanced visual continuity of the foreshore is considered a positive development.
Overall rating of visual impact	High: the additional car park and higher bridge would both be dominant visual elements that would be somewhat offset by the removal of the existing bridge.
Comment / mitigation measures	Integrated landscape/engineering design to achieve a strong foreshore open space buffer is essential. Likewise tree planting and softly integrated fill batters from the bridge to the existing landform; opening up of foreshore space under the bridge and landscape works as proposed to mitigate the proposal. Use of colour oxides for the structure should be investigated to reduce its visual contrast.

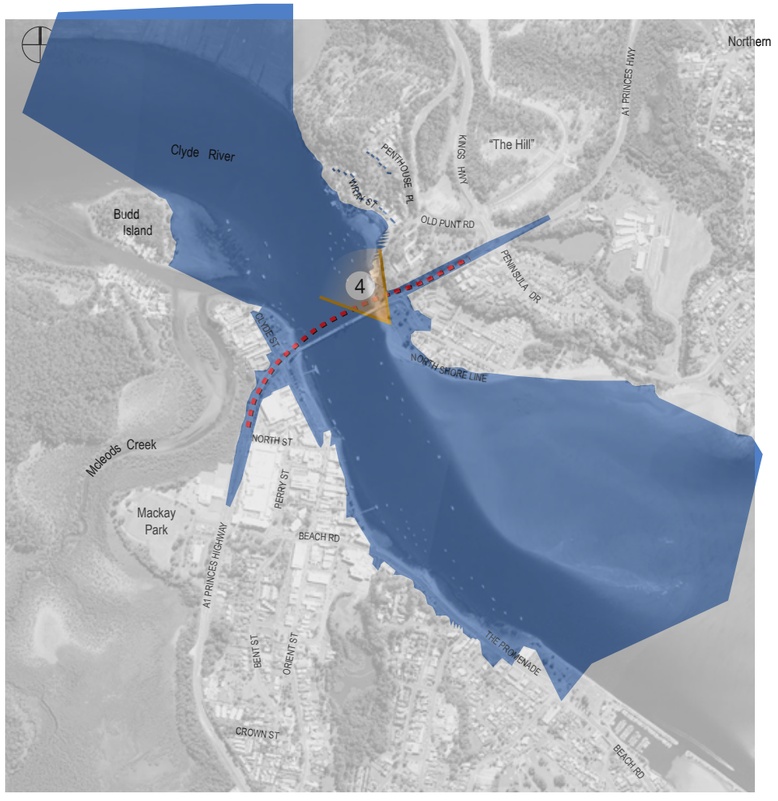

Figure 8.13 Viewpoint location.

Figure 8.14 View from the foreshore beach in front of the caravan park looking across the bay.

Figure 8.15 After view showing the indicative alignment of the new structure in the skyline- note views to mountains are obtainable from under the bridge.

VIEWPOINT 5	
Description of the setting	Foreshore park and beach in front of council park and caravan park
Element visible of the project	Open views of the new bridge structure.
Category of viewer	Tourists, recreational users
Nature of impact	Adverse, the higher alignment of the bridge would become a dominant visual feature,redefining the skyline. It is noted that the existing bridge has two high towers vertically protruding into the skyline.
Visual sensitivity	High, the foreshore area is a popular destination for tourist and locals alike. This makes this zone sensitive to change.
Magnitude of change	Low, the proposal would be further away compared to the existing bridge, improve visual permeability along the waterway and foreshore. At night time, the proposal would become slightly more dominant due to the height of lighting fixtures. The proposal would remove the existing bridge, opening foreshore views across the river.
Overall rating of visual impact	Moderate
Comment / mitigation measures	It should be noted that the proposed urban design/landscape concept plan opens up the foreshore and enhances its legibility and connectivity that visually improves that area. Proposed planting beside the new bridge abutments will assist in visual mitigation.

Figure 8.16 Viewpoint location.

Figure 8.17 View from the western foreshore park looking east across the water to the project.

Figure 8.18 After view from the park showing the indicative alignment of the new bridge n the skyline.

VIEWPOINT 6	
Description of the setting	Foreshore park
Element visible of the project	Views across the river of the new higher bridge
Category of viewer	Tourists, locals
Nature of impact	Adverse, the new bridge would be a more dominant element in the setting.
Visual sensitivity	Moderate, the foreshore park and boat ramp are important recreational facilities, yet less prominent than the promenade, hence the moderate sensitivity.
Magnitude of change	Moderate, the new bridge would become a dominant feature, yet the overall viewscape would greatly be retained. To some extent the removal of the existing bridge would mitigate this new situation.
Overall rating of visual impact	Moderate
Comment / mitigation measures	Mitigation tree plantings to settle the bridge in where it meets the land on the northern foreshore will assist in visual mitigation. Removal of the existing bridge will assist in mitigation.

Figure 8.19 Viewpoint location.

Figure 8.20 View from the Batemans Bay shopping "hub" on the western side of Clyde Street, looking across to the carpark, picnic shelter and existing bridge, with glimpses of bay view.

Figure 8.21 After view showing the indicative alignment of the new structure in the setting- note the existing vegetation screens most of the view, along with existing carparking blocking views to the water.

VIEWPOINT 7	
Description of the setting	Clyde Street shops opposite the foreshore carpark/picnic shelter zone
Element visible of the project	Glimpses of bridge alignment through the trees
Category of viewer	Public
Nature of impact	Adverse
Visual sensitivity	High due to tourists, and locals using this popular main street/ hub zone for Bateman's Bay.
Magnitude of change	Negligible due to the existing trees and vegetation providing green buffering. The removal of the existing bridge contributes to this outcome.
Overall rating of visual impact	Negligible
Comment / mitigation measures	It should be noted that the night time visual glare is considered minor in the overall context of the view due to the treed setting. Retention of existing trees would provide sufficient visual mitigation. The retention of trees is an important aspect to the resulting visual impact.

Figure 8.22 Viewpoint location.

Figure 8.23 View from the promenade looking north towards the new bridge

Figure 8.24 After view showing the indicative height of the new bridge in the view from this location.

VIEWPOINT 8	
Description of the setting	Bateman's Bay promenade
Element visible of the project	Elevation of bridge
Category of viewer	Locals and tourists alike
Nature of impact	Adverse, the new bridge elevation will pierce the skyline in areas, especially to the west. It is noted that the existing bridge is closer to the viewer, and that there are only two vertical elements protruding into the skyline.
Visual sensitivity	High, this is a tourist area with high recreational and local usage.
Magnitude of change	Moderate, the proposal would slightly pierce the skyline to the left of this view, yet sit below the skyline to the right towards the northern foreshore. At night time, the proposal would become slightly more dominant due to the height of lighting fixtures.
Overall rating of visual impact	Moderate - high
Comment / mitigation measures	Consider darker colour for the bridge to assist in visual mitigation. Consider approaches to lighting that would minimise glare at night time.

Figure 8.25 Viewpoint location.

ential

Figure 8.26 *View from the foreshore against Beach Road, before it turns a corner*

Figure 8.27 *After view showing indicative alignment of the new bridge in the bay setting.*

VIEWPOINT 9	
Description of the setting	From the foreshore strip beside Beach Road, where it meets the promenade.
Element visible of the project	The new bridge structure, higher above the water line, but lower than the skyline.
Category of viewer	Locals and visitors alike.
Nature of impact	Adverse
Visual sensitivity	High due to tourists, and locals using this popular Batemans Bay water edge/ promenade due to the viewers enjoying panoramic water/bay views.
Magnitude of change	Low, the visual presence of the structure is limited due to its distance to the viewer. The removal of the existing structure contributes to the visual permeability of the riverscape.
Overall rating of visual impact	Moderate
Comment / mitigation measures	Limiting the visual contrast of the structure through the use of oxides would limit visual impacts.

Figure 8.28 *Viewpoint location.*

Figure 8.29 View from Vesper Street looking easterly to the existing bridge. (Source: Google Street View)

Figure 8.30 After view showing the indicative height of the new bridge structure in the setting at this intersection (Source: Google Street View)

VIEWPOINT 10	
Description of the setting	From Vesper Street, looking towards the old bridge approach.
Element visible of the project	Bridge structure above Clyde Street and shared use path linking to foreshore
Category of viewer	Locals, tourists alike
Nature of impact	Adverse
Visual sensitivity	Low due to the transient nature of road users and pedestrians.
Magnitude of change	High due to the visual dominance of the bridge at this intersection, transforming visually the streetscape.
Overall rating of visual impact	Moderate, the limited impact is driven by the lower sensitivity of the viewer.
Comment / mitigation measures	Consideration of crime prevention through environmental design strategies. It is important to consider measures to avoid confined urban spaces along the ramp of the shared use path in conjunction with the development potential of the adjacent property to the east. Introducing screening vegetation at the abutment and abutment return walls to settle the structure and reduce its visual dominance. Reduction in hard paved surfaces, e.g. narrowing of Clyde Street at this location, and emphasising the green/ open space connectivity to the foreshore. Introducing street trees along Clyde street to visually off-set the scale of the structure.

Figure 8.31 Viewpoint location.

8.2 SUMMARY OF VISUAL IMPACTS

The adjacent table 8.1, summarises the visual impacts of the various assessed viewpoints that the project would likely have.

The closer to the foreshore area where the bridge is proposed, the higher the visual impact. Further away in both directions, the impacts are reduced as the overall structure in the skyline also opens up other views currently blocked by the existing bridge.

The open nature of the expansive water setting obviously impacts upon the visual impact, making the structure more visually exposed than in a vegetated setting.

Along the foreshore areas close to the new structure, impacts are generally high- hence the need for integrated urban planning and design solutions for the foreshore areas that assist in mitigating the proposed new bridge alignment. There is opportunity to enhance foreshore areas as part of this project for the community.

It is noted that the existing bridge protrudes into the skyline in most views, with the two vertical towers currently. The existing bridge has a filigree nature, and the new bridge will be more monolithic. The new bridge by comparison will protrude as a horizontal line into the skyline- thereby changing the visual effect.

The new bridge has two main visual benefits- it is higher than the existing, thereby opening up distant views to ranges below the structure, and it will greatly improve the foreshore connectivity by removing current abutments and opening up the open space fluidity.

There are two out of ten viewpoints designated with "***High"*** visual impact, and four classified as "***High/moderate***"- this the design needs to consider the mitigation strategies put forward in order to mitigate the adverse impacts.

Viewpoints		Sensitivity	Magnitude	Impact
1	WRAY BAY	High	Moderate	Moderate-High
2	END OF OLD PUNT ROAD	Moderate	High	Moderate-High
3	HIGH HILL ON THE NORTH FORESHORE	Moderate	High	High-Moderate
4	BEACH IN FRONT OF THE FORESHORE PARK	High	High	High
5	FORESHORE PARK AND BEACH IN FRONT OF COUNCIL PARK	High	Low	Moderate
6	FORESHORE PARK	Moderate	Moderate	Moderate
7	CLYDE STREET SHOPS	High	Negligible	Negligible
8	BATEMAN'S BAY PROMENADE	High	Moderate	Moderate-High
9	FROM THE FORESHORE STRIP BESIDE BEACH ROAD	High	Low	Moderate
10	VESPER STREET	Low	High	Moderate

Table 8.1 Visual impact summary table

8.3 MITIGATION STRATEGIES

It should be noted, that the proposed concept design integrates a number of mitigation measures by applying the urban design objectives and principles identified in Section 4 of this report.

The design of the proposal would continue to be developed in consideration of the Roads and Maritime urban design policy 'Beyond the Pavement' to guide development of the detail design, including the urban design guidelines - Bridge aesthetics, landscape guideline, environmental Impact assessment practice note and others. The design development integrate engineering and urban design processes and would be underpinned by the urban design objectives, principles and concept contained in this report. Design development of the foreshore areas would occur in consultation with Eurobodalla Shire Council, the community and key stakeholders. A landmark bridge could be achieved that would be settled in the landscape and respects the functioning of the urban environs.

Roads and Maritime's development of the proposal would include the following mitigation measures:

An Urban Design and Landscape Plan (UDLP) will be prepared to support the final detailed project design and implemented as part of the CEMP. The UDLP will present an integrated urban design for the project, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The UDLP will include:

- Proposed revegetation plan that will include:
  - species to be used
  - screening of infrastructure where required and practical
  - minimising the impacts of headlight glare on surrounding residents
  - Planting of foreshore areas to be to be determined in consultation with council.
  - procedures for monitoring and maintaining landscaped or rehabilitated areas.
- Design treatments for:
  - built elements including retaining walls and the bridge and consider application of crime prevention through environmental design strategies
  - pedestrian and cyclist elements including shared use path locations, paving types and pedestrian crossings
  - fixtures such as seating, lighting, fencing and signs
  - details of the staging of landscape works taking account of related environmental controls such as erosion and sedimentation controls and drainage.

The UDLP will be prepared in accordance with relevant guidelines, including:

- Beyond the Pavement urban design policy, process and principles (Roads and Maritime 2014c)
- Landscape Guideline (RTA 2008)
- Bridge Aesthetics (Roads and Maritime 2012c)
- Shotcrete Design Guideline (RTA 2005c).

The potential visual impact of the earthworks will be minimised by careful design that integrates with adjoining landforms. This could be achieved through rounding of the top of cut batters, tailing off of cut batters and a gradual flattening of grades at ends of fill embankments in order to avoid sharp transitions at ends.

Retaining walls will be constructed to minimise the construction footprint and removal of existing vegetation, where possible. Consideration will be given to screen planting below walls and the use of visually recessive materials in order to minimise the visual dominance of retaining walls

The proposal will be designed to avoid impact to prominent trees and vegetation communities where possible. Water quality structures and drainage lines will be designed to avoid existing vegetation where possible.

9.0 SUMMARY

The replacement of the Batemans Bay Bridge with a new structure offers new opportunities from an urban design point of view. The bridge could act as a marker and landmark to the town, contributing to its urban fabric, whilst creating a dramatic and memorable experience for its users.

The elevated bridge proposed, combined with the natural beauty of the setting would exploit views to the sea and riverscape, vistas to the ranges and coastal wetlands, to create a unique experience that reinforces the sense of place.

The proposed urban design concept contained within this report reflects a sensitive response that celebrates the setting, whilst replacing the existing structure, and providing an improved facility that is fit for purpose for many years to come. The foreshore areas have improved connectivity, and enhanced open space systems, with careful attention paid to the landscape design to settle the bridge in where it meets the earth at each foreshore.