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# **Epping Bridge Concept Design**

Landscape Character and Visual Impact  
Assessment

IPD-22-12975

Team Binder: EBP150523-MOTTM-EPG-LA-RPT-000001

Revision: B

**OFFICIAL**





**DRAFT**  
**Epping Bridge Concept Design:**  
**Landscape Character and Visual Impact Assessment**  
Revision D





# Information

## Version Control

Issue	By	Review/verifier	Date	Comments
A	E.Anwar/J.Forbes/M. Walker	L.Hancock/M. McGirr	16.08.2023	Draft issue for 50% PDR
B	E.Anwar/J.Forbes/M. Walker/A.Sabu	L.Hancock/M. McGirr	06.12.2023	Draft issue for 80% PDR
C	E.Anwar/A.Sabu	L.Hancock/M. Walker	29.01.2024	Draft issue LCVIA as part of 80% Main Works
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# Section 1: Introduction

## 1.1 Purpose of this report

The Epping Bridge Proposal is one of the key infrastructure upgrades associated with the Epping Town Centre Urban Activation Precinct Program. In July 2018 the NSW Government announced the replacement Epping Road Bridge to follow the intersection upgrade at Epping Road and Essex Street.

The Epping Town Centre road projects aim to improve traffic flow and road safety, and help reduce traffic delays and congestion. As part of the Epping Town Centre road projects, this project provides opportunities to achieve placemaking objectives, transport integration (active transport connections), network operation outcomes, and reduce future costs.

This report has been prepared as a supporting document for the Review of Environmental Factors (REF) for the Epping Bridge Concept Design, in accordance with the Guideline for landscape character and visual impact assessment EIA-N04 (TfNSW, 2023). The purpose of the assessment is to identify the potential impacts of the proposal and where, and how, these may be mitigated through the urban and landscape design.

## 1.2 Overview

The NSW Government has previously announced the replacement of Epping Road Bridge as the third in a series of Epping Town Centre Road projects which aim to improve traffic flow and road safety and help reduce traffic delays and congestion.

In May 2022 a joint announcement by the Federal and NSW Governments was made, which detailed an election commitment of a split 50:50 funding for the Epping Bridge proposal.

Epping Bridge is located in the revised Parramatta Local Government Area and is a Transport for NSW asset operated and maintained by Sydney Trains. Epping Bridge spans the Northern Railway line South of Epping Station and connects to Beecroft Road and Carlingford Road.

The Proposal provides opportunities to achieve placemaking objectives, transport integration (active transport connections), network operation outcomes (improved operational, and safety outcomes), and reduce future costs (maintenance cost savings, and avoiding future bridge re-design costs to cater for a fourth rail track at Epping Station).

## 1.3 Objectives

The Epping Bridge Proposal will:

- support the Epping Town Centre Urban Activation by increasing road capacity for future growth and renewal.
- improve safety and reduce traffic congestion across the Epping Road Bridge.
- improve pedestrian and cyclist safety by providing a wider and protected footpath.
- improve access to the town centre for the local community, road users and business.
- increase westbound lane capacity through the Epping Town Centre.
- provide for future cycle and pedestrian connectivity through the Epping Town centre.
- provide a ‘no regrets’ investment that aligns with future road and rail plans.
- provide a well-designed infrastructure element that makes a positive contribution to Epping Town Centre.

## 1.4 Scope

The Proposal would include the following key features:

- staged removal of the existing bridge
- construction of a new bridge which would include:
  - » an additional westbound traffic lane
  - » an additional right turn lane eastbound from Beecroft Road onto Blaxland Road
  - » a pedestrian and cyclist shared path
  - » a raised central median, with widened eastbound and westbound lanes
  - » installation of new safety screens on the bridge
  - » installation of new traffic signals
  - » installation of new street lights
- replacement of existing rail signals attached to the existing bridge piers
- upgrade of approaches to the bridge from Epping Road, Beecroft Road and Blaxland Road
- landscaping and site rehabilitation.

## 1.5 Landscape Character and Visual Impact Assessment (LCVIA) methodology

The methodology for this Landscape Character and Visual Impact Assessment (LCVIA) has been guided by the *Guideline for landscape character and visual impact assessment: Environmental impact assessment practice note E1A-N04* (TfNSW, version 2.3, 2023) (the Guideline).

The LCVIA has three main purposes:

- 1– To inform the development of the concept design so the project can avoid and minimise potential landscape character and visual impacts;
- 2– To inform Transport, other agencies and the community about the landscape character and visual impacts of the project; and
- 3– To identify the avoidance, management and mitigation strategies already embedded and those that would be implemented if the project was approved.

### The difference between landscape character impact and visual impact

Landscape character impact is to determine the impact of the project on the area’s sense of place. The sense of place encompasses both the built and natural environment. Landscape character impact is therefore about the ‘fit’ of the project within its context. For an evolving precinct such as Epping Town Centre, the future character is a consideration as well as the existing character; and the ‘fit’ of the project therefore needs to take both conditions into account.

Visual impact is concerned with what people see, and how the project might change views and outlook, whether the viewpoints are from public spaces (streets, parks, rail corridors, shared paths for example) or from private spaces (homes, gardens).

As per the process defined in the Guideline, the landscape character impact and visual impact of the project are separately assessed. The method to measure impact in each case is based on the combination of the sensitivity of the existing area or view to change and the magnitude (scale, contrast, quality, distance) of the project on that area. Figure 28 is the rating matrix from the Guideline which is used for both assessments.

		Magnitude		
	High	Moderate	Low	Negligible
High	High	High-Moderate	Moderate	Negligible
Moderate	High-Moderate	Moderate	Moderate-low	Negligible
Low	Moderate	Moderate-low	Low	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Figure 1 Landscape character and visual impact rating matrix  
*Guideline for landscape character and visual impact assessment: Environmental impact assessment practice note EIA-N04*



# Section 2: The Context

## 2.1 Location

The Epping Town Centre is located 18 kilometres north west of Sydney CBD and 10 kilometres north east of Parramatta CBD. Epping is a suburb of Parramatta and lies on the higher part of the LGA. As part of the Urban Activation Precinct, Epping is transforming to higher density precinct, especially around the station.

Epping Bridge is located on the eastern side of Beecroft Road and the western side of Blaxland Road. It is approximately 140m south of the Epping Station. The existing bridge consists of a five-lane road with pedestrian footpath on both sides of the bridge. It is the part of the primary east-west vehicular traffic route connecting Macquarie Park and Carlingford.

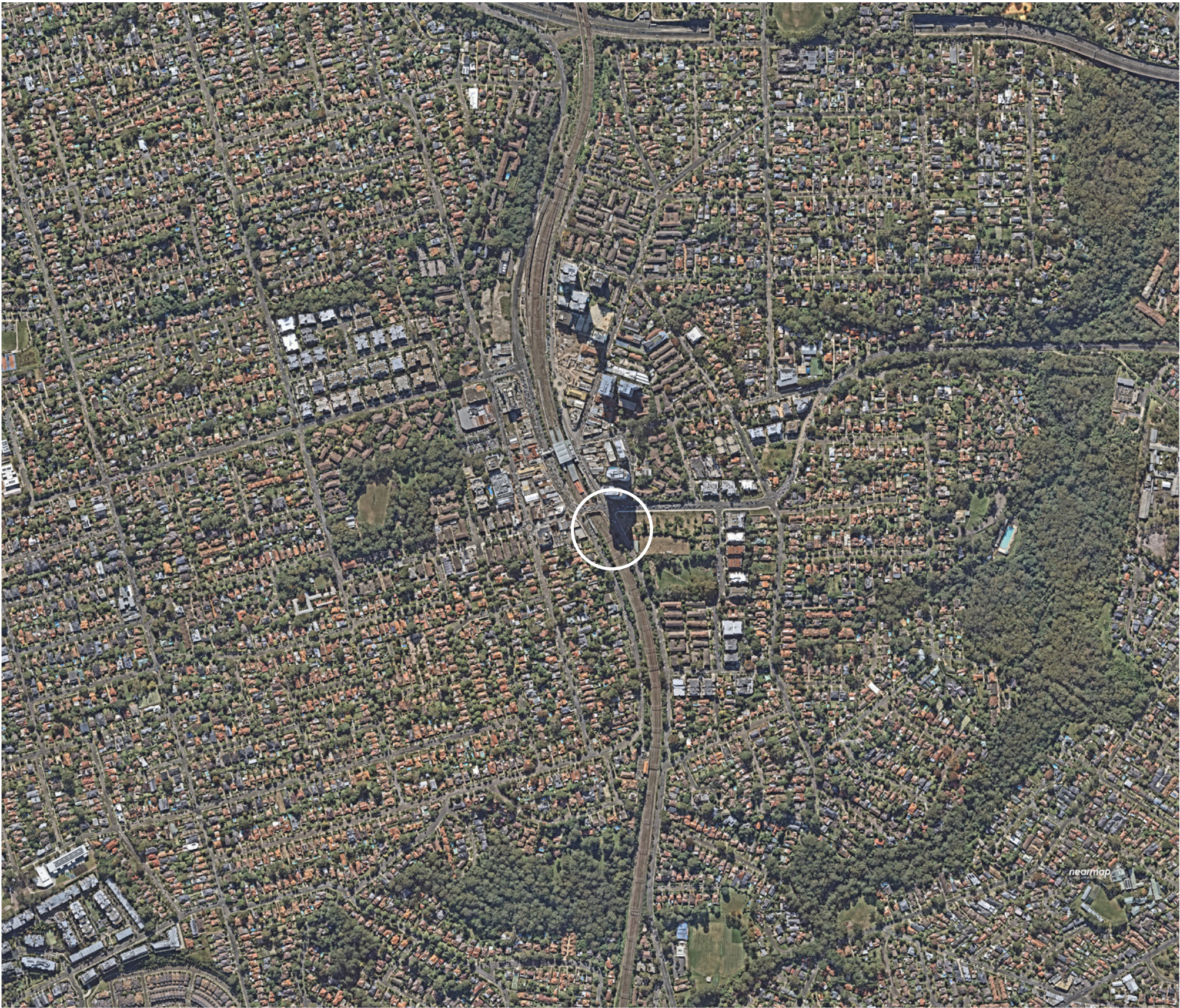


Figure 2 Epping Bridge - Wider Context



## 2.2 Heritage context

### Epping local history

Aboriginal people from the Wallumedegal group, whose lands stretch along the Parramatta and Lane Cove rivers, were living in the region of Epping when first Europeans arrived.

“They had lived for generations as fisher-hunter-gathers in a rich environment of river flats, mangrove swamps and creeks – fishing with pronged spears and handlines, gathering shellfish, hunting birds and small game and collecting a variety of edible bushfood plants”.<sup>1</sup>

After settlement by Europeans, Epping developed an industry of vegetable and fruit growing. In the 1800’s, several families established citrus orchards in the area. By the early 1900’s there was a booming fruit market in Epping and nearby Pennant Hills. Cartons of fresh produce including apples, oranges and lemons, would be carted to Ermington Wharf on Parramatta River and sent by boat to the Sydney markets.

### Local heritage - Epping Railway Station Group

Epping Station is listed on the s.170 heritage register for assets that are owned or managed by Transport for NSW (TfNSW) identified as having heritage significance. Although the road bridge itself is not a heritage item and is outside the heritage curtilage, it is directly adjacent to the heritage curtilage and in the vicinity of the Station Building.

The Strathfield to Hornsby section of the Northern line was opened for traffic on 17 September 1886. The line was constructed as a ‘single line’ and Hornsby became the temporary terminus and remained so until the extension to Hawkesbury River was opened in 1887. At the time of the opening, stations were provided at Ryde, Dundas (later Eastwood), Field of Mars (now Epping), Beecroft, Thornleigh and Hornsby. At the time of the opening, the station was known as ‘Field Of Mars’, being re-named ‘Carlingford’ on 5 April 1887. On 7 October 1899, the station was re-named as ‘Epping’.

Due to upgrades of this railway line over the years, the Station area has been completely rebuilt and now also incorporates an underground connection to the Metro North West Line. The original Type A10 brick station building, which was built in c.1900 on an island platform, remains in good condition today.

According to the guidelines by TfNSW ‘Managing Heritage’, Section 5 Principles for design, new development in a historic context should aim to preserve the special qualities that contribute to the ‘sense of place’ in a way that respects the old while embracing the ‘new’.

### Local heritage - Forest Park

Forest Park is listed as a local heritage item and located 200m south of the Epping Bridge Proposal. This park is not directly visible from the bridge, however the perimeter group of trees is partially visible from the southern part of the bridge. There is minimal relationship between the bridge and the park, although the perimeter landscaping lends a leafy backdrop to the bridge.



Figure 3 Epping Station heritage platform building

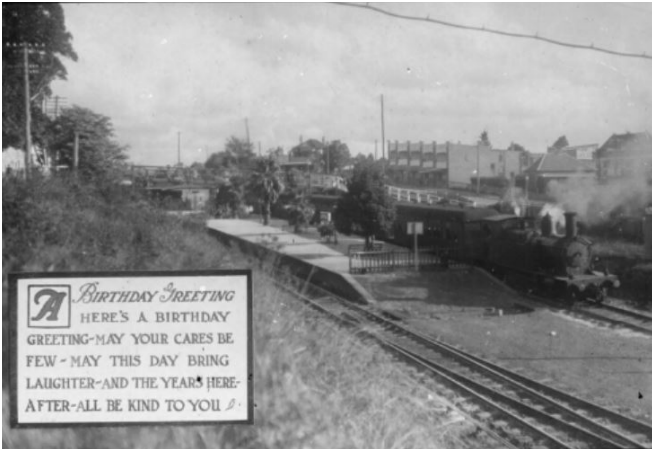


Figure 4 Epping Station history Source: the State of Library NSW



Figure 5 Epping citrus farming history Source: the State of Library NSW



Figure 6 Epping citrus farming history Source: the State of Library NSW



Figure 7 Epping citrus farming history Source: the State of Library NSW

<sup>1</sup> Source: Wallumedegal - An Aboriginal History of Ryde by Keith Vincent Smith for the City of Ryde Council, 2005.



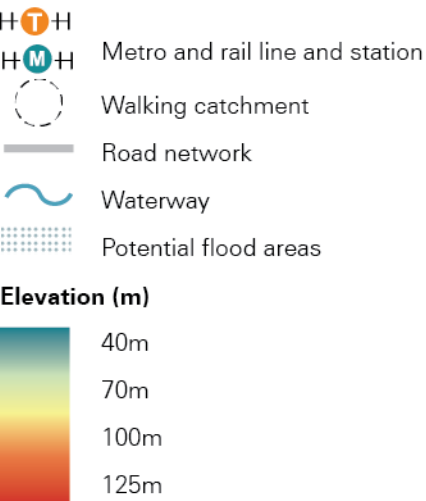




## 2.4 Topography

Epping Bridge is located on a ridgeline at the elevated part of Epping. Despite its location, the bridge has limited vantage points due to recent high density mixed use development around the station.

The topography slopes down toward the southern side, therefore there are district views towards Blaxland Road.





## 2.5 Existing character

### At the Epping Bridge

The existing Epping Bridge is part of the main east-west vehicular thoroughfare connecting Macquarie Park, Epping and Carlingford. The Bridge also connects to Beecroft Road and carries traffic to Cheltenham and Beecroft. At the time of the site visit, the east-west pedestrian movements were more visible at the railway footbridge, which runs parallel to the Epping Bridge. The bridge also connects the Epping Road shared bike path to Bridge Street shared path as part of Epping - Carlingford Cycleway project.

The bridge is visible from the train platform and framed by vegetation at both ends of the bridge. It is elevated and provides a foreground to the recently developed high density precinct.

### Around the Epping Bridge and Station

The east side of the rail corridor is a mixture of activities from retail, commercial and residential. The west side is mostly retail and commercial with some mixed use at the corner of Carlingford and Beecroft Roads.

The west side is still relatively low scale with higher density development along Carlingford Road. In comparison, the east side of the rail corridor gradually transformed into higher density precinct with pockets of medium density residential.

With the arrival of Metro, the recently upgraded train station footbridge is frequently used by pedestrians to move between east and west of Epping town centre.

### Site Photos - around Epping Bridge



Image 1: View towards Epping Bridge from within the rail station



Image 4: View from Epping Bridge towards the north-east of Epping Town Centre.



Image 7: East station entry



Image 2: View towards Epping Bridge from the southern corner of Blaxland and Epping Roads



Image 5: View from Epping Bridge towards the south



Image 8: Taxi stand and bike lockers at the east of the station



Image 3: View towards Epping Bridge from the northern corner of Blaxland and Epping Roads



Image 6: District view from the bridge to Epping Road towards Macquarie University



Image 9: Views from footbridge west of the station



Site Photos - Land use character



Image 10: Retail at Bridge Street



Image 13: Retail along Beecroft Road



Image 11: Retail at Langston Place



Image 14: Commercial offices at Rawson Street



Image 12: Mural at a laneway off Langston Place



Image 15: Laneway off Beecroft Road connecting to Rawson Street



Figure 11 Existing character location



# Section 3: The Proposal

## 3.1 Proposal status

The illustrations on the following pages have been developed to support the Review of Environmental Factors (REF) as part of the Preliminary Design Review (Concept Design). The Concept Design will serve as the reference for the subsequent procurement phase for the Detailed Design and Construction of the Project. Details of the bridge in this Concept Design phase is subject to detailed design and may evolve at next phase of the Proposal.

## 3.2 Urban design

The design has been informed by thorough site and contextual analysis that identifies key features and opportunities. The urban and landscape design for Epping Bridge Proposal responds to the built character of the precinct.

The NSW Government has identified the need for improving the bridge through the Epping Activation Program. In addition, the Sydney Trains Bridge Examination Report from 2022 concluded that the bridge is in a deteriorated condition. Inspections carried out by Transport in October and November of 2022 indicated that the bridge requires significant maintenance or renewal. The draft REF concludes that the ‘do nothing’ option was not considered a feasible alternative as it is inconsistent with the NSW Government’s objectives and would not meet the needs of the Epping community.

The scope of works presents an opportunity to enhance the entrance to Epping Town Centre and strengthen its function as a major intersection within the existing urban context and increase the safety and security of all users of the bridge, particularly the safety of pedestrians and cyclists within a hostile vehicle-dominated environment.

The bridge is located in a heavily modified urban environment where vehicle traffic has long been prioritised above pedestrian movements. The bridge design will maximise the available width of the deck to accommodate additional vehicle lanes. Within the spatial constraints resulting from being inserted between the heritage listed Epping Station to the north and the Metro South Services Building to the south, the on-bridge pedestrian and shared paths will be as wide as possible.

Protection screens are required along both sides of the proposed bridge. It is important to use the required screens to introduce a lively intervention that can bring joy into the journey, allowing the users to experience the qualities of the place through movement. The introduction of screens is an opportunity that can be used as a device to link the two sides of Epping with a memorable moment, relieving the greyness of the surrounding urban context, supporting wayfinding, and marking the moment users pass over the railway corridor.

Additional road space is being appropriated to enable connections from the bridge into the adjacent local road system. This results in the existing planted islands and verge planting in front of the Metro Service Building being reduced in area.

A raised pedestrian threshold has been introduced on High Street and Bridge Street, both Council owned roads, to simplify pedestrian movements to and from the bridge shared path and into Epping Town Centre, improving the safety for pedestrians.

Following City of Parramatta Council’s Active Transport Strategy, cyclists use the proposed 4.0m wide shared path across the bridge to connect east to west. The connection to the east is along the existing Epping Road shared path which is 3.0m wide. The connection to the west shares the footpath space along Bridge Street in front of the existing shop frontages. Council recently widened this footpath to better accommodate the new shared path function.

## 3.3 Design from Country

The Project is on the traditional lands of the Wallumedegal people. Design opportunities exist to integrate urban design, cultural ‘place’ design and engineering design, in line with current NSW Government and industry best practice, notably the Government Architect of New South Wales (GANSW) document Connecting with Country draft Framework.

Not having had the opportunity for consultation with the local Aboriginal community at this concept design stage of the project, the screen design concept is focused on solving the geometric constraints of the bridge. A vibrant colour, bright orange, has been selected to tie into a design narrative that could be based around the European history of Epping in the late 18th and early 19th century as a place for citrus orchards (Figure 12), while complementing the warm tone colour scheme of the s.170 heritage listed Epping Station platform building. This does not preclude the further inclusion of a heritage interpretative artwork that could reflect endorsed local Aboriginal stories. This integration is to be further developed at the next phase of project.



Figure 12 Historic photo of the Epping district orchards. Source: State Library of NSW

### 3.4 The bridge structure

The existing overbridge, proposed to be demolished, is a three-span structure that was originally built in 1936 and has undergone various modifications throughout its life. It currently has an overall length of 27.5m, with Span 1 having a length of 12.2m, Span 2 with a length of 9.2m and Span 3 with a length of 6.1m. It has an overall width of 19.2m and spans over three tracks, namely the ‘Down Suburban’ and the ‘Down Main’ which are under Span 1 and the ‘Up Main’ which is under Span 3. There are no tracks under Span 2.

The new bridge proposal is for a single span bridge with four 7 x 3.4m wide lane car lanes, a 4.0m shared cycle pedestrian way to the southern side of the bridge and a 1.8m wide footpath to the northern side of the road bridge. The geometry of the bridge is governed by the road’s geometric design, which includes a minimum allowable gradient and agreed-upon minimum vertical clearances to the rail below. These clearances are set at 5.45m for the down rail track and 5.2m for the up-rail track.

The bridge design will consist of a single span measuring approximately 38 meters, supported by new cast in-situ concrete piled abutments. The span length has been designed to accommodate future track provision. The overall deck width normal to the design control line is approximately 31m however is wider at both abutments due to the flaring required on the bridge corners of the bridge to accommodate the turning paths of large vehicles. These dimensions may change and are subjected to the detailed design process.

#### Protection screen design

To comply with the relevant standards, the proposed Epping Road bridge requires the following types of screens:

- 1– Protection screens to restrict objects from falling or being thrown into the rail corridor. They must comply with AS 5100 and be designed to RMS Bridge Technical Direction BTD 2012/01 Provision of Safety Screens on Bridges
- 2– Safety screens to provide protection against direct contact with exposed 1500 V OHW equipment. Safety screens must comply with T HR EL 08001 ST Safety Screens and Barriers for 1500 V OHW Equipment. Polycarbonate and polymethyl methacrylate (PMMA) may be used as infill material between posts for vertical safety screens.

Openings in the screen must be compliant with AS5100.1-2017, Clause 16.4 (c-ii), which states that clear openings must not be greater than 25 x 25mm for bridges over rail corridors.

The following functional requirements need to be met:

- The support posts and screens must be fixed to the top concrete edge of the Type MAO double steel rail traffic barrier, to allow installation from the inside of the bridge to avoid additional possessions for work above the railway lines
- The geometry of the screen post has been designed to accommodate the Vehicle Roll Allowance and the post sits outside that envelope
- Spacing of posts must integrate with the spacing of the double steel traffic barrier railing; matching or alternating with them. The proposal is for 1200mm post centres with fixings of every second post integrated with the base plate fixing system of the double steel rail. The smaller post spacing allows for easier transition to the curved corners of the bridge and more colour variables in the screen material to allow the design narrative to be expressed
- Due to the curved geometry at each corner of the proposed bridge, vertical posts and screens simplify the design. An inclined screen would result in a complicated geometry with trapezoidal panel shapes at the corners
- A vertical alignment of the screen results in a clean termination against any adjacent fencing. The transition between the screen and the fencing must not allow unauthorised access to the outside edge of the bridge, the rail corridor or to the live exposed 1500 V dc OHW equipment
- The screens must be minimum 3m above the roadway or footway surface or the top surface of any adjacent pedestrian or traffic barrier, whichever is the greater. This results in a screen height of 3770mm above the walking surface
- The screens must have a vertical solid area above the FFL of at least 1800mm, in compliance with T HR EL 08001 ST Safety Screens and Barriers for 1500 V OHW Equipment. With the remaining portion above 1800mm able to be perforated to increase transparency and allow patterning
- The safety screen shall extend at least 6m beyond the edge lane line of the roadway below, or if this is not possible, to within 1m of the end of the abutment wingwalls, or on pedestrian or shared path bridges to the landings at the end of the main bridge spans.

The urban design considerations in relation to the screens include:

- Making a positive visual contribution to the surroundings by introducing a lively intervention that can bring joy into the journey, allowing the users to experience the qualities of the place through movement. This may include the use of bright vibrant colour/s
- Using the bridge screens as a device to link the two sides of Epping with a memorable moment, relieving the greyness of the surrounding urban context, supporting wayfinding, and marking the moment users pass over the railway corridor
- Considering the comfort of pedestrians and cyclists using the footpath and shared path, including maximising space allocation to encourage active transport alternatives
- Retaining views off the bridge to the station and the surrounding area
- Providing a sensitive contextual screen design where heritage interpretation is integrated and potentially could include the work of an Indigenous artist
- Utilising a high-quality, durable screen material that can incorporate perforations to increase transparency, and allows for the use of patterning to provide a memorable experience.

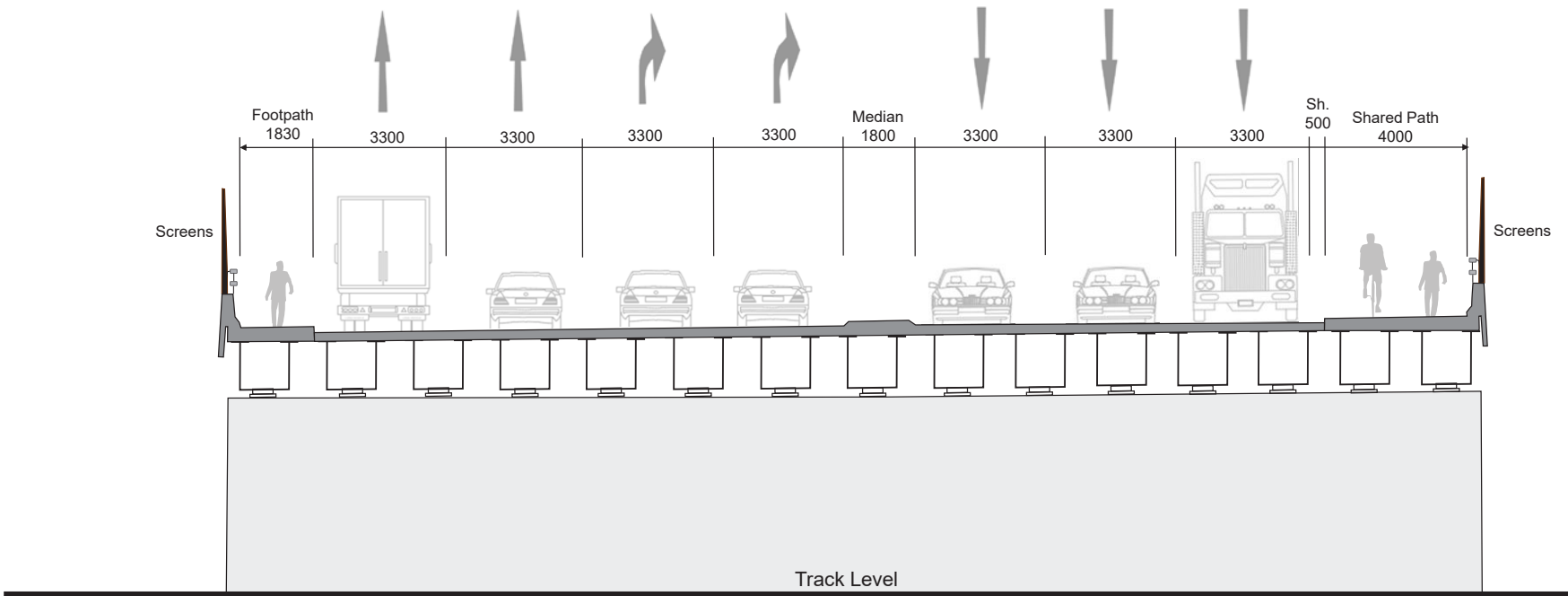


Figure 13 Cross-section through the proposed bridge structure, subject to detailed design development



The screen material

The screen proposal in Figure 18 illustrates the design of the vertical bridge protection screens.

The screens are proposed to be made up of steel support posts, that could be galvanised steel or painted to emphasise and support the selected colour scheme. Aluminium panels are proposed for their strength, durability and ability to be either solid, laser cut or punched with perforations. Colour will be applied by way of powdercoating; a finish that is extremely resistant to weathering from UV exposure, easy to clean and will retain its colour for many years.

The proposal at concept stage is for bright vibrant orange panels that are solid where required for safety, and perforated where views and patterning are desired (Figure 14). The colour orange has been selected as an interpretation of the European history of Epping in the late 18th and early 19th century as a place for citrus orchards (Figure 16), while complementing the warm colour palette on the adjacent s.170 heritage listed Epping Station platform building (Figure 15). Should an endorsed local Aboriginal story be made available then the inclusion or overlay of an Aboriginal heritage interpretative artwork is encouraged. This integration is to be further developed at the next phase of project.

The main urban design objective remains the introduction of a lively, colourful intervention to bring joy into the journey.

The visual impact of the screens is discussed in the following section of this LCVA. Additional mitigations as suggested in the assessment should be considered in the next stage of design development.

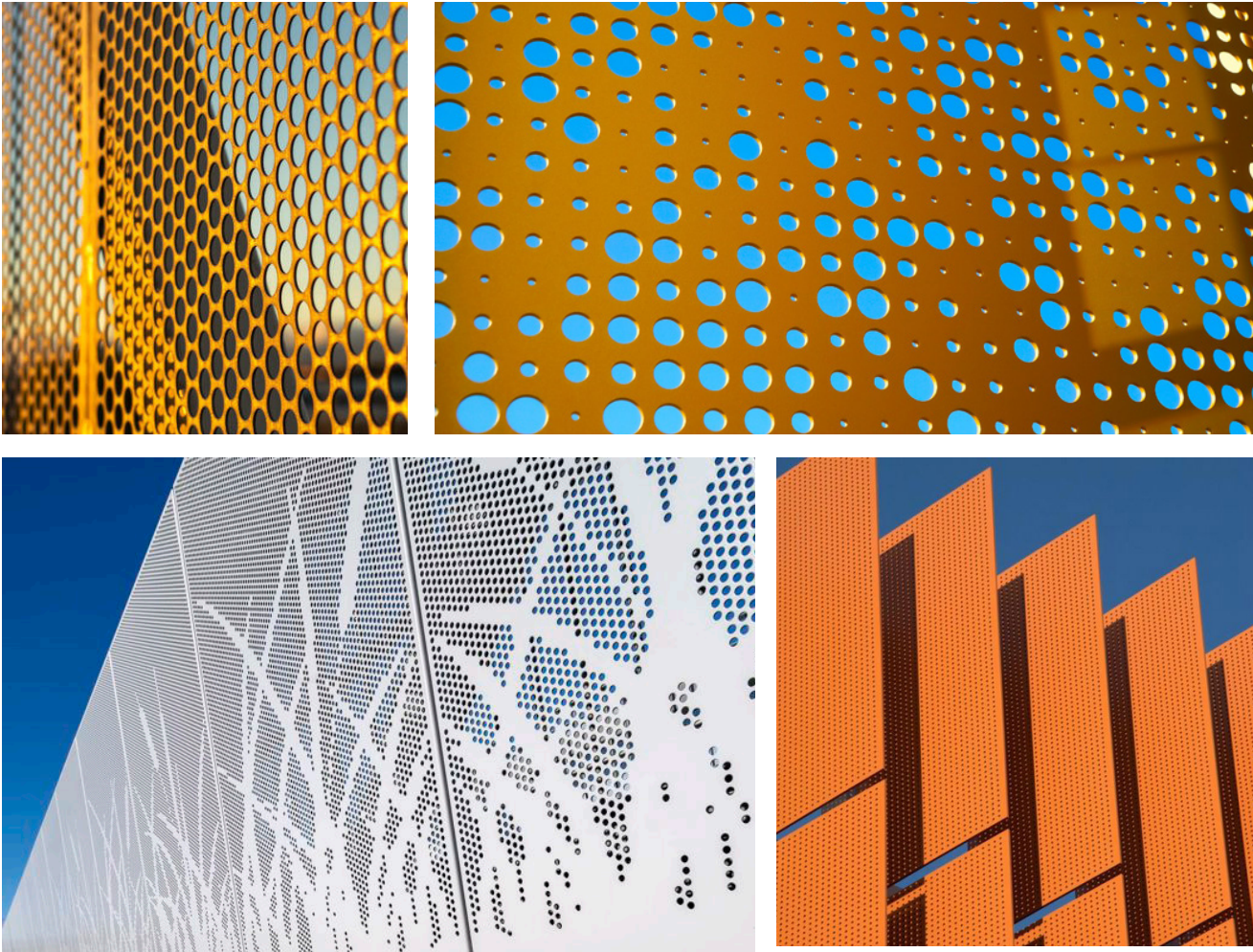


Figure 14 Orange perforated panels are proposed for the bridge screens, depicting a local heritage interpretation story. Source: Arrow Metal and Locker Group



Figure 15 Warm colour palette of the Epping Station heritage platform building. Source: DesignInc



Figure 16 Historic photo of the Epping district orchards. Source: State Library of NSW



Figure 17 Orange citrus fruit. Source: <https://simplegardenlife.com/>



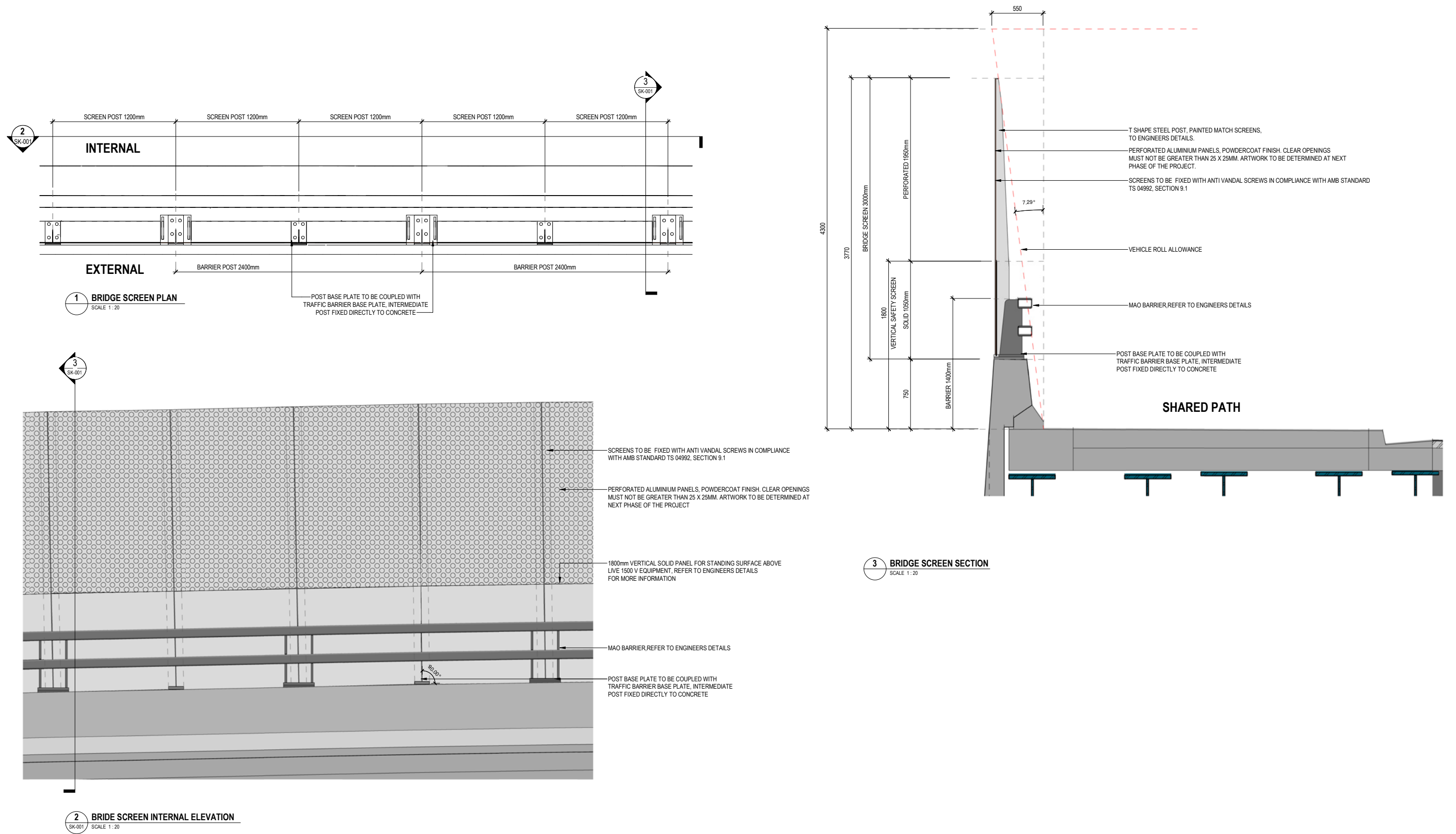


Figure 18 Bridge screen details, subject to detailed design development



Retaining walls

The Epping Bridge proposal will result in the vertical and horizontal re-alignment of the approach roads and hence retaining walls are required to support the additional fill, footpaths, and shared path.

The locations requiring retaining walls are identified on Figure 20 Landscape site plan, and summarised in the following table.

The decision on the type of retaining wall at these locations depends on the following factors:

- Height of Retaining wall
- Type of traffic barrier to be integrated with retaining wall
- Future excavation for fourth track adjacent to Blaxland Road
- Impact Assessment for trees located along Blaxland Road
- Location of utilities.

The various options considered for the retaining walls are as follows:

- L-shaped wall
- Contiguous pile
- Segmental blocks with geogrids
- Embankment
- Post and panel.

Further design development is required in future design stages to confirm the length and appearance of the retaining walls.

Wall ID	Location	Control Line/ Chainage (m)	Wall Length	Wall Height	Facing Direction	Potential Finish
RW01	Beecroft Road Corner of Bridge St	MW5I/ 0 to 10	20m	0m to 1.5m	Facing the Footpath Traffic Barrier above	Surface treatment (cast- in texture or a facing material) to concrete facing the footpath
RW02	Blaxland Road	MW2I/ 0 to 100	100m	0m to 3.1m	Rail Corridor	Concrete surface treatment with possible pigment oxide colour..
RW03A	Blaxland Road	MW1J/ 0 to 50	50m	0m to 1.5m	Forest Park (LEP Heritage Listing)	Property owners to be consulted.  Wall appearance to be appropriate to the heritage values of the park.  Note: Mature trees on boundary line to be retained and protected.
RW03B	Blaxland Road	MW1J/ 50 to 160	110m	1.5m to 3.2m	Private Property	Surface treatment (texture) to concrete. Property owners to be consulted.
RW04	Epping Road	MW1J/ 160 to 200	40m	0m to 1.5m	Private Property	Surface treatment (texture) to concrete. Property owners to be consulted.



### 3.5 Landscape design

The aim of the landscape design for the Epping Bridge project is to integrate the landscape elements with the local character while improving pedestrian comfort and enhancing the character of Epping Town Centre. The paving is selected to tie into the existing public domain material palette, planting will be maximised and the Council entry totem pole artworks will be retained and re-inserted in the new island planting areas.

#### Paving

The paving strategy includes four paving types which respond to the existing context and the City of Parramatta’s Public Domain Manual (2017):

- Paving Type 1 – a pattern of granite pavers (refer to materials schedule) for the pedestrian path which matches the existing paving at the corner of Langston Place and Epping Road
- Paving Type 2 – a pattern of granite pavers with defined banding (refer to materials schedule) for the shared path which matches the existing paving along Bridge Street
- Paving Type 3 – brushed concrete for the shared and pedestrian paths across the bridge to tie into the existing footpaths
- Paving Type 4 – a single colour granite paver (Sesame Grey) for the pedestrian crossing/ vehicle transition area.

#### Planting

The planting strategy includes maximising planting where possible while maintaining sightlines and access for pedestrians, cyclists and motorists. The plant palette includes native species which will provide visual interest through colour and texture and require little maintenance following establishment (refer to plant schedule).

As a result of the upgrade, 28 trees require removal, including one on the station platform and five on the northern bank along Langston Place due the bridge construction. The opportunities for tree planting within the project boundary include reinstating some of these trees, including the tree on the station platform which will require approval by Sydney Trains.

The proposed tree species are *Lophostemon confertus* (Brush Box) and *Elaeocarpus reticulatus* ‘Prima Donna’ (Blueberry Ash) chosen for their large canopies to provide shade, success in constrained urban environments and consistency with the existing landscape character.

According to the TfNSW Tree and Hollow Replacement Guidelines 2023, a total of 128 trees are required to be planted throughout the local area to accommodate the proposed tree removal and will need to be coordinated with the City of Parramatta to determine appropriate locations.



Figure 19 Council totem pole signage / town entry artworks. Source: DesignInc





- TREES TO BE REMOVED
- TREES TO BE RETAINED
- TREES TO BE PROPOSED
- PROPOSED PLANTING
- P1 - GRANITE FLAGSTONE PAVERS WITH BANDING
- P2 - PEDESTRIAN THRESHOLD PAVII
- P3 - CONCRETE PAVING
- P4 - GRANITE FLAGSTONE PAVERS
- ARTWORK
- PROPOSED RETAINING WALL (TREATMENT TBC)
- BRIDGE SCREENS

Figure 20 Epping Bridge, Landscape site plan, subject to detailed design development



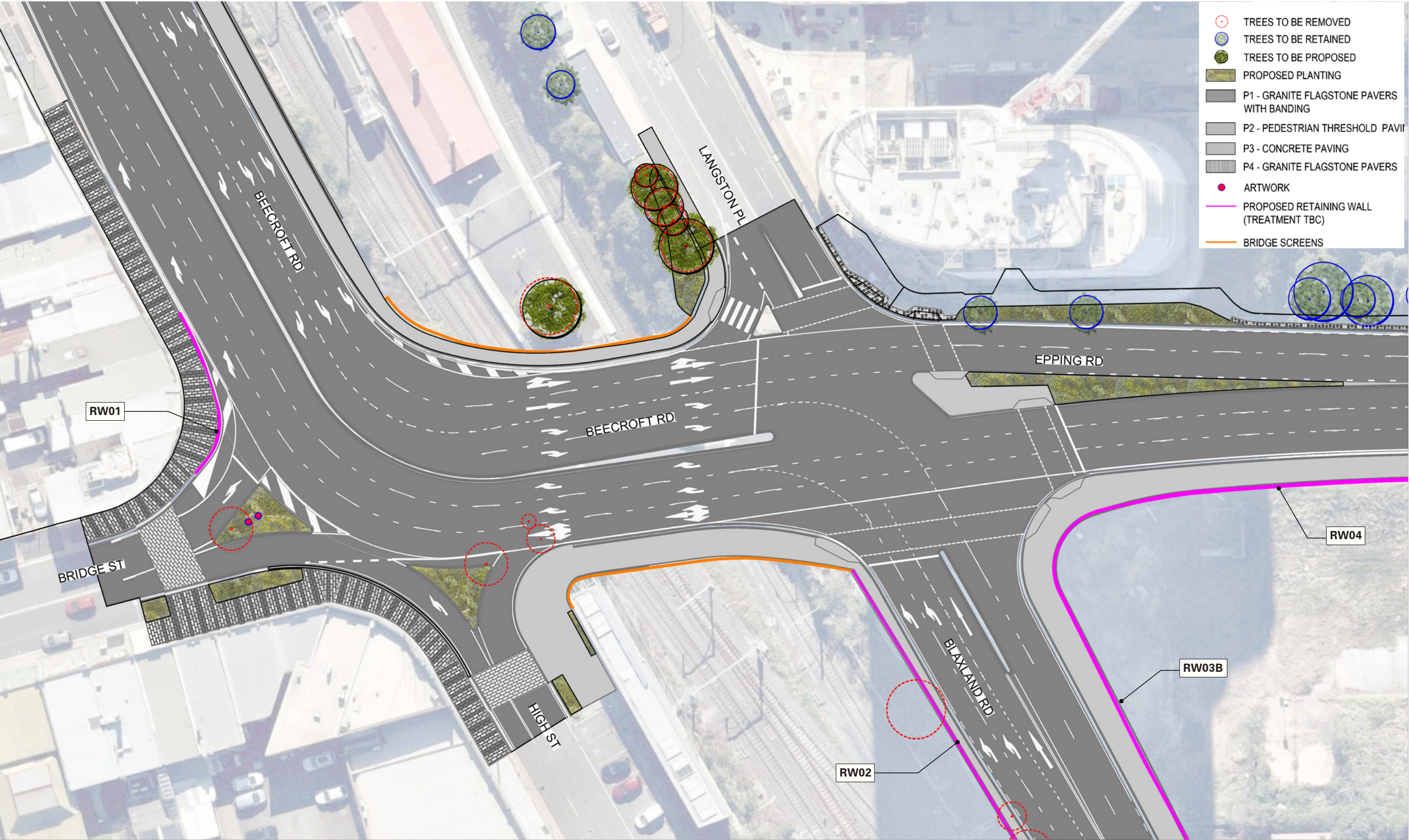


Figure 21 Epping Bridge, detailed landscape plan, subject to detailed design development



scale 1:500 in A3



# Section 4: Landscape Character and Visual Impact Assessment

## 4.1 Introduction

### Landscape Character Assessment

A landscape character zone (LCZ) is an area of distinct and consistent character, usually a combination of landform, vegetation cover and existing structures, within which the impact of the proposed works may differ from the impact in another zone. Understanding the differences between the LCZs is key to developing an urban design that responds to them and can seek to reinforce their particular and positive characteristics. This task involves photographing, mapping and describing different LCZs across the project alignment, and determining and describing the capacity of these different zones to absorb the project modifications.

Two primary factors are used to determine the impacts on any landscape character zone:

- Sensitivity of the character zone
- Magnitude of the project in that zone.

Sensitivity relates to the area’s capacity to absorb change caused by the proposal. A character zone with a coherent character would generally be more visually sensitive to any new development than a precinct whose topography and natural and/or built character have greater variety. Urban areas that are used for commercial or industrial uses may be ranked lower than, for example, areas that are predominantly residential in nature.

The magnitude of the project depends firstly on the scope of that project – its size and scale. The location of the works in relation to the character zone also influences magnitude. For example, a proposed structure with contrasting scale to the existing natural context would have a very different impact on landscape character than a structure that is developed adjacent to similar built-up character.

The landscape character impact is determined using the matrix shown in Figure 1, based on the combination of sensitivity and magnitude.

### Visual Impact Assessment

The extent of the area from which the project would be able to be seen is the visual catchment or visual envelope. It is primarily related to the landform, taking into account any vegetation or built structures that might obscure views. For this project, in an evolving town centre environment, likely future built form is also a consideration. Visibility is influenced by distance and direction of view. Representative viewpoints are taken from within the visual catchment, captured through site visit(s) and supplemented by desktop study using GIS and topographic analysis

Visual sensitivity refers to the quality of the existing view and how sensitive the view is to the proposed change. It is measured by assessing a combination of factors including the composition of the view, its capacity to absorb change, and potentially also by duration (length of exposure) and frequency from key viewpoints.

Magnitude in relation to visual impact is measured as the degree of change the particular view undergoes as a result of the proposed project. It includes physical character, size and scale considerations and also night-time as well as day-time conditions. Relative to the existing condition, magnitude is ranked on a scale from negligible to high.

The visual impact assessment method is similar to that for landscape character, combining the viewpoint sensitivity and the magnitude of the project for an overall rating. Each rating is accompanied by a description of the factors of both sensitivity and magnitude which have influenced that result.

### Mitigation

The impact on each landscape character zone and viewpoint will be considered in design development. Impacts identified in the assessment would be avoided and minimised where possible, with mitigation strategies reported.

Any residual impact that has been identified, but that cannot be addressed in the concept design stage, has been noted to be carried forward into the detailed design phase.



## 4.2 Landscape Character Assessment

The study area for Epping Bridge project has been divided into five Landscape Character Zones (LCZs) as illustrated in Figure 22. The assessment was based on the site characteristics currently visible within the context of the project. The five LCZs identified within the study area are discussed and assessed below.

- LCZ1 - Town centre zone
- LCZ2 - Station zone
- LCZ3 - East mixed use town centre
- LCZ4 - Vacant residential and recreational space
- LCZ5 - South of railway zone



Figure 22 Landscape character zones



LCZ 1 – Town Centre Zone

Description

LCZ 1 is at the existing western side of Epping Town Centre. This area has predominantly two or three storey level retail shops and commercial buildings. There is also an existing boundary fence around the intersection of Bridge Street and Beecroft Road to separate the traffic lane and the footpath.

The topography rises towards Epping Bridge and Bridge Street. There is an open spatial character due to the combination of low-scale built form, intermittent street trees and occasional hedging at the perimeter of the footpath and median strips. This vegetation provides visual respite to the urban quality of this LCZ.

Sensitivity

Due to the existing and future modified character of LCZ 1 the sensitivity has been assessed as Low.

Magnitude

Proposal works in this LCZ would include the introduction of the following elements:

- Removal of existing street trees at Beecroft Road
- Traffic islands at Bridge Street and High Street
- New planting in the traffic islands
- New artwork at the traffic islands
- New retaining wall at the corner of Bridge Street and Beecroft Road.

The proposal introduces adjustments to the existing infrastructure and vegetation, mostly at street level. Therefore, the magnitude is considered to be Moderate.

Assessment of impact:

The combination of the sensitivity and the magnitude of the proposed change provides an integrated landscape character impact of **Moderate-Low**.



Figure 23 LCZ1 - Town Centre Zone - low scale built form with limited landscaping

LCZ 2 – Station Zone

Description

LCZ 2 is the railway corridor on the northern side of Epping Bridge, including the existing station area. It includes structures associated with the rail function (platform, station buildings, overhead and at-grade infrastructure) and presents as mostly built-up in character, with some vegetation at the perimeter of the railway boundary adjacent to the bridge. The heritage station building is an important part of the character.

Epping Bridge is elevated with views toward the roof of the existing heritage station building and Epping Station. Due to the bridge’s elevated position in relation to the railway corridor, the spatial character is open through this corridor. The group of shrubs and mature trees at the perimeter of the railway boundary provides visual respite to the otherwise structured quality of this LCZ.

Sensitivity

While modified and mixed in terms of built elements, this LCZ includes the heritage railway station. Its sensitivity has therefore been assessed as High.

Magnitude

Proposed works in this LCZ would include the introduction of the following elements, mostly at street level:

- An increase in the road level of the bridge
- Adjustment to the northern bridge footpath connecting to Beecroft Road
- New perforated aluminium screen at Epping Bridge
- Removal of the existing mature tree at the platform (shown in Figure 24)
- Removal of the existing vegetation at the perimeter of the rail corridor (Figure 25) and mature trees near the bike lockers on Langston Place (Figure 26).

The proposal alters the built environment and the existing landscape. The magnitude is considered to be Moderate.

Assessment of impact:

The combination of the sensitivity and the magnitude of the proposed change provides an integrated landscape character impact of **High-Moderate**.



Figure 24 LCZ2 - Station Zone - railway corridor with structures related to the rail function



Figure 25 LCZ2 - Station Zone - perimeter vegetation at the rail corridor



Figure 26 LCZ2 - Station Zone - a group of mature trees at Langston Place



LCZ 3 – East Mixed Use Town Centre Zone

Description

LCZ 3 is the eastern side of the railway corridor. It includes an area recently developed for high-density mixed-use development, with an urban plaza at Langston Place and an existing row of bike lockers. There are some new plantings within the plaza, and established group of trees and hedging at the perimeter of the railway boundary surrounding the bike lockers, which provide some relief to the otherwise dominant urban character. Current land use zoning allows for greater intensification of this area. This area is elevated and at a similar height datum with the existing Epping Bridge: this gives a sense of openness to the edge of the LCZ, where the tall buildings form a backdrop.

Sensitivity

Due to the existing modified character of LCZ 3, and the potential for the zone to continue to change with more tall buildings into the future, its capacity to absorb change has resulted in an assessment of Low.

Magnitude

Proposal works in this LCZ would include the introduction of the following elements:

- An increase in the road levels to meet into the new bridge
- Adjustment to the northern bridge footpath connecting to Langston Place
- A new traffic island at Epping Road with planting.

The proposal introduces adjustment to the existing infrastructure mostly at street level. Therefore, the magnitude is considered to be Low.

Assessment of impact:

The combination of the sensitivity and the magnitude of the proposed change provides an integrated landscape character impact of **Low**.



Figure 27 LCZ3 - East Mixed Use Town Centre Zone - high density mixed use development with public space

LCZ 4 – Vacant residential and recreational space

Description

LCZ 4 includes the currently vacant amalgamated residential lots at the corner of Epping and Blaxland Roads and the existing bowling greens. The area currently has an open character due to this combination and the minimal screening vegetation at the perimeter of the railway boundary. However, the amalgamated residential lots have a deferred commencement for 5-8 storey apartment buildings, which will result in a more built-up urban character. The heritage listed Forest Park is also on the perimeter of this zone.

Sensitivity

With the existing character of LCZ 4, the sensitivity has been assessed as Moderate. In the future, while this assessment cannot be definitive as to future built form, it is considered likely that the sensitivity will be less than at present.

Magnitude

Proposal works in this LCZ would include the introduction of the following elements:

- An increase in the road level of the bridge and the approach on Beecroft Road
- A traffic island at Epping Road with planting
- A retaining wall at the perimeter of the vacant lot boundary
- The proposal introduces adjustment to the existing infrastructure at street level with changes in the existing level.

The proposed work will result in more hardscape elements in the public domain that will somewhat reduce the existing open character. Therefore, the magnitude is considered to be Moderate.

Assessment of impact

The combination of the sensitivity and the magnitude of the proposed change provides an overall landscape character impact of **Moderate**.



Figure 28 LCZ4 - Vacant residential and open space lots - currently open to the sky with undefined edges

LCZ 5 – South railway zone

Description

LCZ 5 includes the area within the railway corridor immediately south of the Epping Bridge. There is a sense of semi-enclosure resulting from the corridor being in cut, with the bridge above. There is visible fencing at the eastern railway boundary and a service building at the western railway boundary. There are limited built-up elements and vegetation at the level of Epping Bridge.

Sensitivity

Due to LCZ 5 being strongly defined by a range of rail infrastructure, and by the bridge crossing over the rail corridor, its sensitivity has been assessed as Low.

Magnitude

Proposal works in this LCZ would include the introduction of the following elements:

- A replacement of the existing Epping Bridge with a new, wider bridge to provide:
  - » an additional westbound traffic lane
  - » a 3.5m wide pedestrian / bicycle shared path to continue Epping Road shared path
  - » an additional right hand turn lane heading south onto Blaxland Road
  - » a raised median between east and westbound lanes and around the western corner of the bridge
- An increase in the road level of the bridge
- A retaining wall along the railway bundary on Blaxland Road, facing the rail corridor
- New perforated aluminum screen at Epping Bridge.

The proposal introduces adjustment to the level of the bridge and raises the current level at the continuation of the shared path. As the bridge will be higher above the railway corridor, the proposed changes will be very prominent. Therefore, the magnitude is considered to be High.

Assessment of impact

The combination of the sensitivity and the magnitude of the proposed change provides an overall landscape character impact of **Moderate**.



Figure 29 LCZ5 - South railway zone - character is dominated by rail infrastructure



## 4.3 Visual Impact Assessment

### Identification of viewpoints

The selected viewpoints shown in Figure 30 were selected from the locations most likely to be visible to public transport users, road and path users, and residents. All of the viewpoints have been illustrated with 'before' (prior to construction) and 'after' views, with the 'after' view being extracted from the three-dimensional design model for accuracy.

**Viewpoint 1:**

Looking south from the elevated pedestrian bridge at the station

**Viewpoint 2:**

Looking north from the shared path at the southern side of Epping Bridge

**Viewpoint 3:**

Looking east toward Epping Bridge from Bridge Street

**Viewpoint 4:**

Looking west from Epping Road north footpath



Figure 30 Viewpoint location



Assessment of Viewpoint 1

Description

This elevated view is from within Epping Station. It is taken from the southern side of the glazed concourse where pedestrians can look south towards Epping Bridge (Figure 31). The view (pre-construction) is dominated by the roof of the station platform with a glimpse of the heritage station building roof. The high-density development east of the railway line and the existing landscaping at the railway line are also visible in the background.

Sensitivity

This view will be experienced by all Metro/Train customers and the wider community who are passing through the station and pedestrian bridge. However, Epping Bridge is approximately 100m metres away, and has buildings on the skyline behind it which further reduce its visibility. The photograph (Figure 32) shows the context of the bridge & screens beyond the heritage station platform building in the foreground.

The sensitivity of this view is therefore considered to be Low.

Magnitude

The project alters this view by the construction of the bridge and 3.77 m high perforated aluminium panel screens along the northern side of the bridge. The screens will be visible in the view because of the proposed colour, but the dominant view remains the roof of the rail platform in the foreground and the tall high-density development on the eastern side of the railway. There is minimal change to the existing fabric of the station and surrounds.

The magnitude of these changes has therefore been assessed as Low.

Assessment of impact

The combination of the sensitivity of the viewpoint and the magnitude of the project on the view provides an integrated impact of **Low**.



Figure 31 Existing Viewpoint 1 - Station Pedestrian Bridge



Figure 32 Proposed Viewpoint 1 - Station Pedestrian Bridge



Assessment of Viewpoint 2

Description

The view is from the shared path at the southern side of the Epping Bridge, looking north towards the station and recently developed high-density mixed-use precinct (Figure 33). The foreground view is dominated by traffic on the bridge, with background view (pre-construction) is dominated by a row of high-density development with a partial view of the station building in the background. The bridge railing is visible in the foreground with perimeter vegetation at mid-ground.

Sensitivity

This view is composed of mostly built form with the existing vegetation breaking up the foreground and background.

This view will be experienced mainly by pedestrians/cyclists who travel on the shared-path. This shows the high-density development as a backdrop to the bridge, with the brightly coloured screens in the foreground.

The sensitivity of this view is therefore considered to be Moderate.

Magnitude

The project alters this view by the construction of the bridge at a slightly higher road level with an additional travel lane, and 3.77m high aluminium steel panel screens along the northern side of the bridge. The screens will be visible due to the close proximity to the shared path, however the dominant view remains the built-up high-density development on the eastern side of the railway.

The magnitude of these changes has therefore been assessed as Moderate.

Assessment of impact

The combination of the sensitivity of the viewpoint and the magnitude of the project on the view provides an integrated impact of **Moderate**.



Figure 33 Existing Viewpoint 2 - Epping Bridge



Figure 34 Proposed Viewpoint 2 - Epping Bridge



Assessment of Viewpoint 3

Description

The view is from Bridge Street, looking east towards Epping Bridge and recently developed high-density mixed-use precinct (Figure 35). The view (pre-construction) is dominated by a combination of high-density developments and the older, two-storey retail properties on Bridge Street. The existing traffic islands at Bridge Street and High Street will be replaced and made smaller due to the realignment of the additional traffic lanes from the bridge. The existing mature tree in the Bridge Street traffic island and in front of the Metro service building, will be removed. The existing Council artworks in the island will be retained and re-used in the new island area.

Sensitivity

This view is composed of mostly built form with the existing vegetation (including mature trees) breaking up the foreground and background.

This view will be experienced mainly by pedestrians/cyclists using the intersection at High Street and Bridge Street, the shared-path and the retail shops, by local traffic, and by office workers in the building adjacent to the intersection. The viewpoint looks back towards the bridge, with the Sydney Metro South Service Building and proposed coloured bridge screens visible.

The sensitivity of this view is therefore considered to be Moderate.

Magnitude

The project alters this view by the construction of the new traffic islands and the removal of the trees. The coloured bridge screens will be visible in the foreground. The dominant view on the skyline remains the retail shops and high-density development in the background.

The magnitude of these changes has therefore been assessed as Moderate.

Assessment of impact

The combination of the sensitivity of the viewpoint and the magnitude of the project on the view provides a combined visual impact of **Moderate**.



Figure 35 Existing Viewpoint 3 - Bridge Street



Figure 36 Proposed Viewpoint 3 - Bridge Street



Assessment of Viewpoint 4

Description

The view is from the footpath at the north side of Epping Road, looking west towards the Epping Bridge and the existing retail shops at west Epping Town Centre (Figure 37). The view (pre-construction) is dominated by Sydney Metro South Service building in the mid-ground with the 9 storey mixed use building (under construction at the time of the writing of the report) visible on the skyline.

Sensitivity

This view, including new split signalised crossing for pedestrians with the proposed bridge screens in the background, will be experienced mainly by drivers who travel through Epping Road. There are few pedestrians and for road users, the view is fleeting. A similar view will be experienced by the users of the shared path on the southern side of Epping Road.

The sensitivity of this view is therefore considered to be Low.

Magnitude

The project alters this view by the widening of the bridge, the slightly higher deck level, the increase in levels on the corner of Blaxland Road, removal of trees on the corner of Langston Place and the installation of coloured screens and the installation of a planted traffic island. The verge area on the northern side of Epping Road will be revegetated with low planting to replace the existing turf.

The magnitude of these changes has been assessed as Moderate. It is noted that the landscape treatment of the island is a positive mitigation measure that has been included in the project works.

Assessment of impact

The combination of the sensitivity of the viewpoint and the magnitude of the project on the view provides an integrated impact of **Moderate-Low**.



Figure 37 Existing Viewpoint 4 - Epping Road



Figure 39 Proposed Viewpoint 4 - Epping Road



Summary of assessments

The table below is provided as a summary of the Landscape Character and Visual Impact Assessment outcome as illustrated in the previous pages. The outcome of this assessment varies from Low to High Moderate to reflect the setting of the project. The highest impact of High Moderate occurs in the area with noticeable changes around the heritage station building. The lowest impact occurs in an area recently developed, such as the high-density mixed-use precinct at Langston Place, or an area further away from the project, such as the existing pedestrian bridge at the railway station.

Summary of landscape character assessment

Viewpoints	Sensitivity	Magnitude	Impact
LCZ1	Low	Moderate	Moderate-Low
LCZ2	High	Moderate	High Moderate
LCZ3	Low	Low	Low
LCZ4	Moderate	Moderate	Moderate
LCZ5	Low	High	Moderate

Summary of visual impact assessment

Viewpoints	Sensitivity	Magnitude	Impact
1	Low	Low	Low
2	Moderate	Moderate	Moderate
3	Moderate	Moderate	Moderate
4	Low	Moderate	Moderate-Low

4.4 Mitigation Strategy

The mitigation opportunities for this project relate mostly to the screen and landscape treatments. Due to space constraints, road design requirements with the additional traffic lanes and reconfiguration of the existing lanes, there are limitations on the introduction of new mitigating elements. However, the design approach has considered the history, existing character and future aspiration as an opportunity to enhance the identity of Epping.

The following safeguards and management measures for the visual and urban design are recommended:

1. The Overall Proposal Design

The following principles are to continue to be incorporated into the overall design of the proposal:

- The role of the bridge as a link across the railway corridor not just for vehicles but also for the wider community
- Keeping the user experience simple with clean lines and no visual clutter
- Maximising functional pedestrian and shared path space on both edges of the bridge, to link into surrounding active transport pathways
- Retention of views from the elevated bridge
- Linking cleanly into the levels of the adjacent roads to minimise impacts on adjacent landscaping
- Identify opportunities for additional landscaping
- Minimising the extent and height of anti-throw screens required, while introducing a lively intervention that can bring joy into the journey, allowing the users to experience the qualities of the place through movement.
- Exploration of opportunities to reduce the impacts on surrounding landscape areas
- Consolidating screens and fences to increase visual access and pedestrian permeability in urban spaces
- Coordination of lighting and road signage to minimise visual clutter

2. Bridge Design

The following principles are to continue to be incorporated into the design of the bridge:

- Simple, clean appearance of bridge parapets
- Provide the required clearances to the railway below and minimise the increase of levels at road surface to reduce visual impacts of the tie in to the surrounding levels.
- Maximising of opportunities to increase public amenity to enhance the public domain.
- Utilise colour and patterning (artwork) to enhance the appearance and relevancy of the bridge screens.

3. Accessibility

The design is to continue to provide improvements to cyclist and pedestrian access through new and upgraded footpaths and shared paths to create a complete network across the rail corridor.

4. Finishes of Screens

The following principles are to continue to be incorporated into the design of the bridge:

- Design the screens to enhance the user experience and guide the journey
- Enhance the generally monochromatic environment by introducing colour and pattern into the screens.
- Create a recognisable new landmark that locates users in relation to the station and Epping town centre.
- Retain visual permeability off both sides of the bridge.
- The screen colour and design should respond to the history of the area Epping. The use of an Aboriginal artist is highly recommended to connect the design to Country.
- Consider the size and scale of the screens to ensure an attractive edge for cyclists and pedestrians using the bridge.

5. Finishes of Retaining Structures

The following principles are to continue to be incorporated into the design of the retaining walls:

- Wall finishes to have a high standard and quality.
- Reduce the apparent visual dominance of the retaining walls by using a neutral colour palette.
- On Beecroft Road, the wall finish should consider the pedestrian footpath user
- On Blaxland Road, the wall facing the railway corridor should consider the scale and utilitarian nature of that environment.
- On Blaxland Road, facing the private owned development site, the finish and colour of the proposed wall should be decided in consultation with the property owner.
- Existing mature trees along the frontage of Forest Park should all be protected and retained to respect and reduce impact on the heritage values of the park.

6. Landscaping

The following principles are to continue to be incorporated into the design of landscaping:

- Integrate the landscape elements with the local character while improving pedestrian comfort and enhancing the character of Epping Town Centre.
- The plant palette to include native species which will provide visual interest through colour and texture and require little maintenance following establishment.
- Wherever possible, low-level planting to be integrated into new traffic islands as a method for softening the ‘hard’ areas of road corridor while maintaining sightlines and access for pedestrians, cyclists and motorists.
- Retention and re-installation of the freestanding Council artwork to be located within the traffic island on Bridge Street, enhancing the public domain.
- The removal of trees on Langston Place (identified as contributing to a landscape character impact assessment of high-moderate) to be mitigated by providing a like-for-like replacement landscape treatment after the construction of the bridge structure.
- Replace the existing tree on the station platform to respect and retain the heritage values of the station.
- Selected paving is selected to tie into the existing public domain material palette.
- Protect existing trees along the frontage of Forest Park.