Appendix 13-D Landscape and Visual Integration Guidelines

FOURTH DRAFT

May 2009

Kenmore Bypass

LANDSCAPE AND VISUAL INTEGRATION GUIDELINES

EDAW | AECOM

Contents

01

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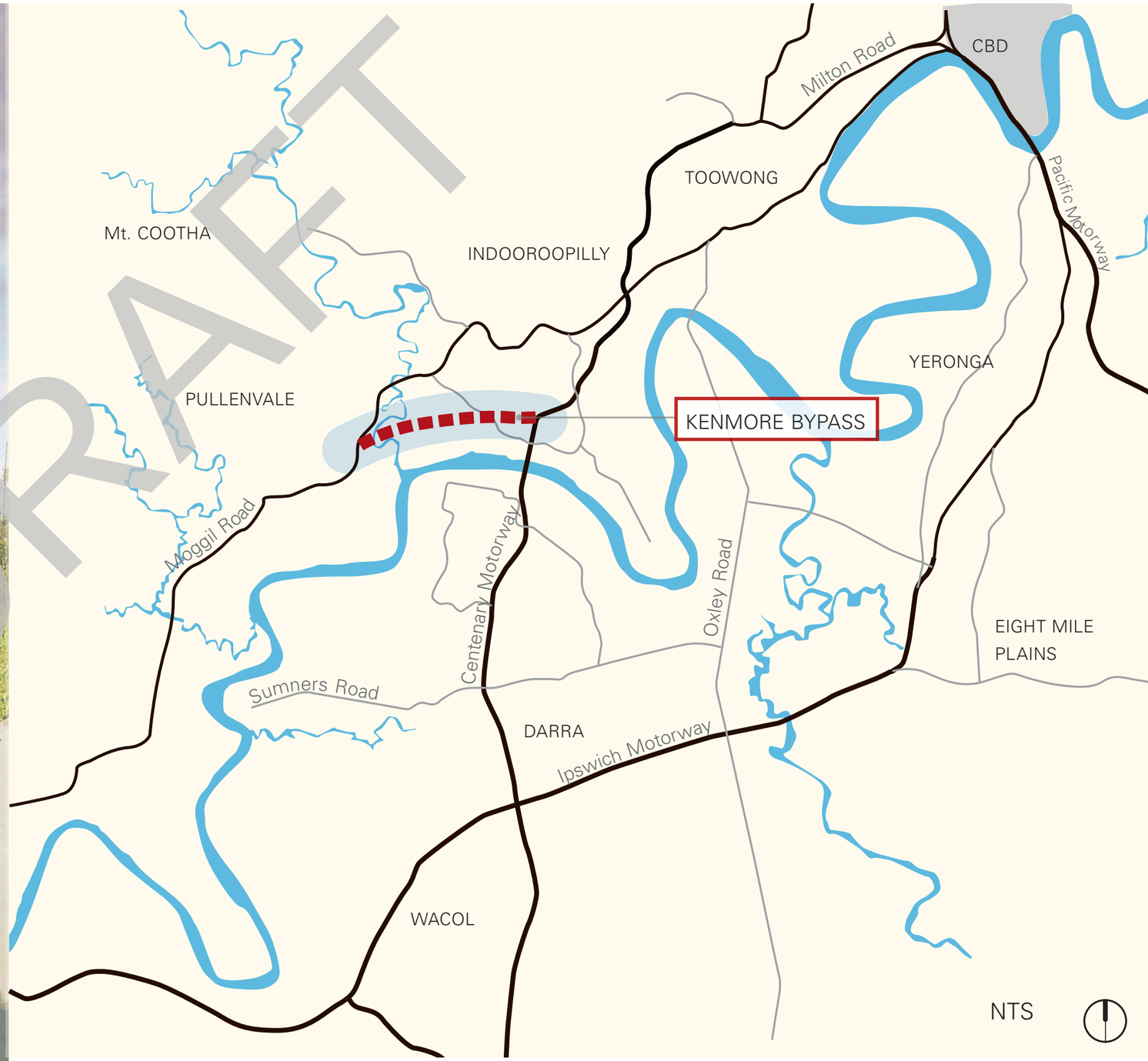

Milton Road
CBD
TOOWONG
Pacific Motorway
Mt. COOTHA
INDOOROOPILLY
YERONGA
PULLENVALE
KENMORE BYPASS
Moggill Road
Centenary Motorway
Oxley Road
EIGHT MILE
PLAINS
Sumners Road
DARRA
Ipswich Motorway
WACOL
NTS

Introduction

1.1 Background

The Landscape and Visual Integration Guideline Report describes the Landscape and Urban Design proposals that accompany the selected preferred concept engineering scheme. The proposals outlined in this document are landscape and visual management and mitigation measures that are not inherent in the concept road engineering design.

This document is a reference document upon which the Landscape and Visual Amenity Assessment of Kenmore Bypass has been undertaken. The assessment therefore assesses the impacts of a "baseline" scheme i.e. the selected preferred concept engineering only and a scheme "mitgated by landscape and urban design" i.e. the combined concept engineering, landscape and urban design.

This report is divided into the following three sections:

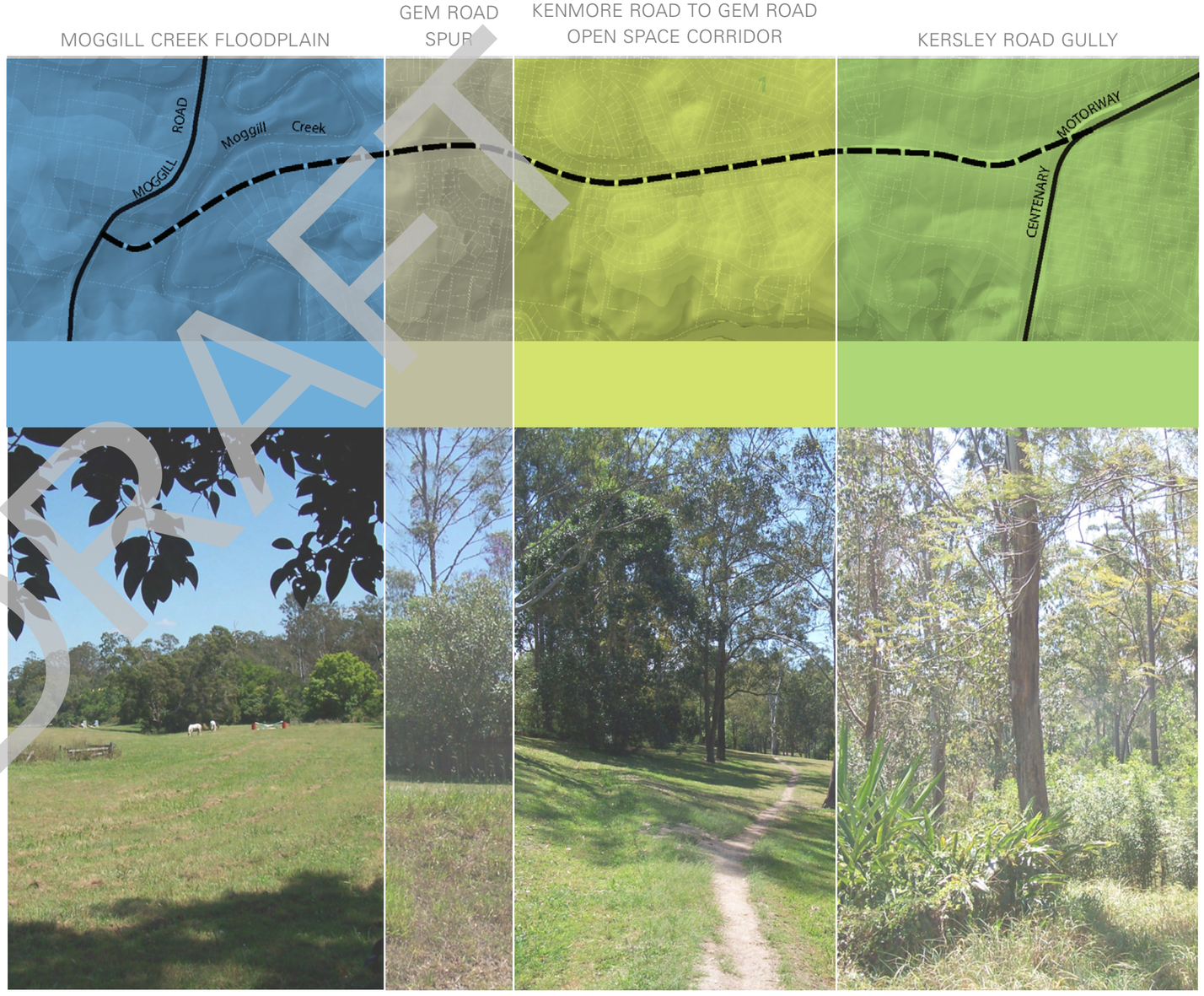
- the landscape and urban design principle and aims
- the landscape and visual integration concept
- specific landscape and visual integration measures

1.2 Project Location

The Kenmore Bypass is a proposed 3.0 km road to link the Centenary Motorway with Moggill Road (see location plan opposite). Currently the site is a reserved road corridor that traverses the south western suburbs of Kenmore in Brisbane.

The existing road corridor can be divided into four landscape character precincts. These are (travelling from west to east) illustrated below;

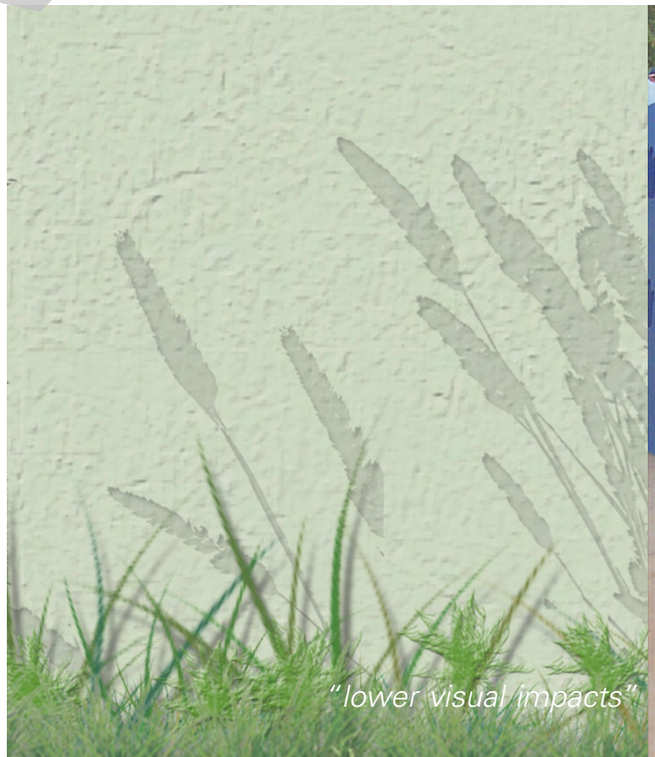
No.	Name	Chainage
1	Moggill Creek Floodplain	3200-4100
2	Gem Road Spur	2850-3200
3	Kenmore Road to Gem Road Open Space Corridor	1900-2850
4	Kersley Road Gully	1100-1900



02


"retain existing vegetation"


"diversify existing habitats"


"lower visual impacts"


"upgrade existing open space"

Landscape and Visual Integration Principle and Aims

2.1 OVERALL PRINCIPLE

The key overall Landscape and Visual Integration Principle

"To provide a landscape and urban design scheme that minimises and mitigates the landscape and visual amenity impacts upon Kenmore's local community and environment"

2.2 KEY LANDSCAPE AND VISUAL INTEGRATION AIMS

To realise the overall principle a number of specific landscape and visual design aims have been developed:

- To screen views for local viewers, both from private and publicly accessible locations.
- To **retain existing vegetation** as far as possible and make provision of screen planting where space allows.
- To provide areas for compensatory off-set planting works that replaces the tree planting and ecologically important habitats removed.
- To utilise a re-vegetation approach to the landscape design, particularly in the areas where existing bushland is to be removed i.e. Kersley Road Gully and Gem Road Spur, so that new planting mimics, reinforces and enhances the existing character of the adjacent bushland areas. This in turn lowers the maintenance requirements.
- To **diversify existing habitats** along the road corridor, for example along Moggill Creek and within the Creek corridor.
- To **minimise** the visual perception of **community severance.**
- To soften the visual intrusion of the engineering retaining structures, cutting and embankments.
- To **lower the visual impacts** of the proposed noise walls.
- To provide a diverse driver experience.
- To **upgrade existing open space** provision that is to be retained, immediately adjacent to the corridor.

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Landscape and Visual Integration Concept

3.1 THE CONCEPT CONTEXT

To ensure the road proposal's landscape and urban design fits into regional context, we need to understand the road hierarchy and nodes of the major arterial roads in the wider area. This allows us to develop a fluid and responsive wider driver experience that considers the bigger picture and provides a sequence of events for the users.

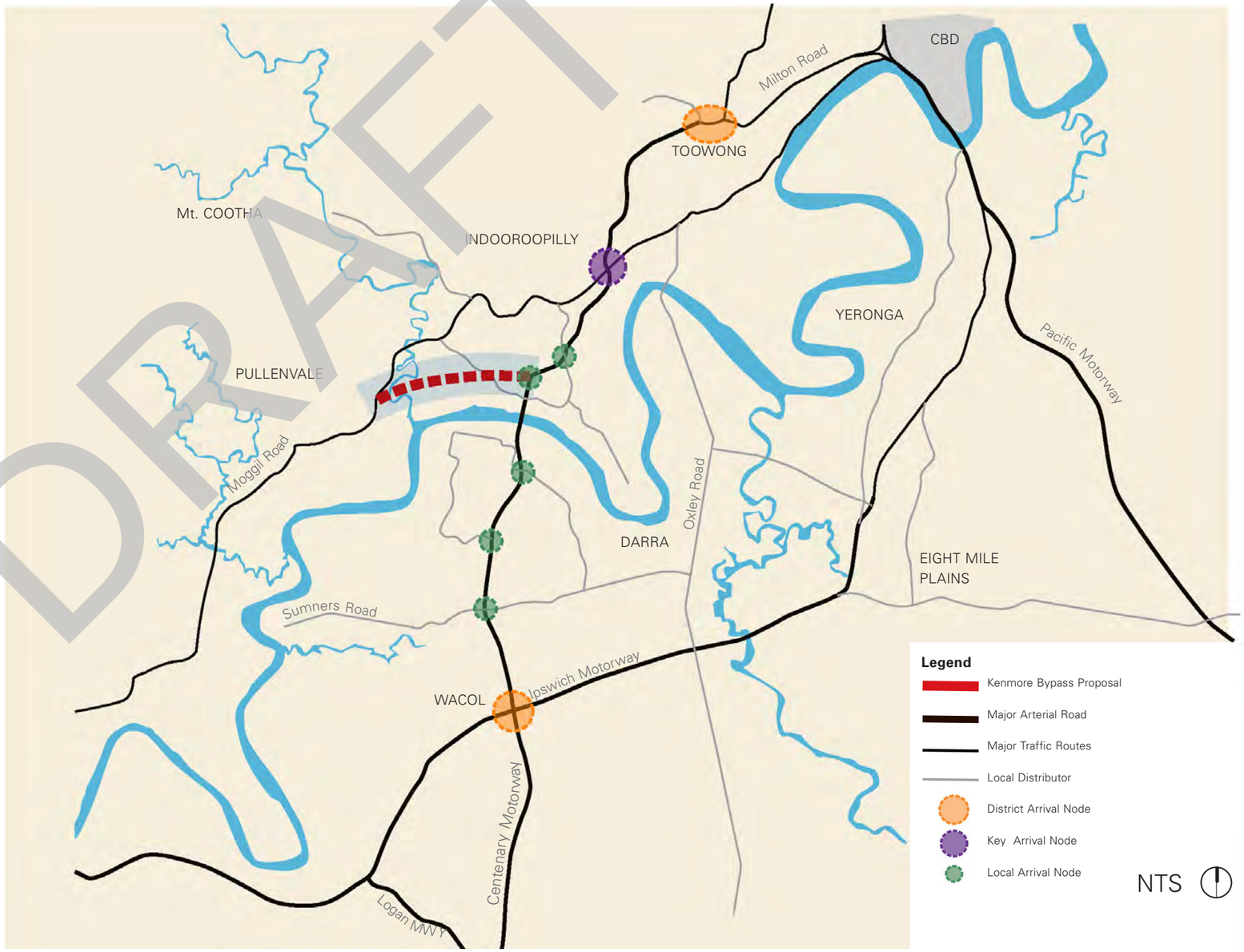
The image opposites illustrates that Kenmore Bypass will be a connector between a major arterial road (Centenary Motorway) and a major traffic route (Moggill Road).

The Kenmore Bypass will be a local arrival point or node along the Centenary Motorway and thus the treatment of the intersection at this locality will respond to this.

3.2 LANDSCAPE AND URBAN DESIGN CONCEPT

The landscape and visual integration measures have been divided into Landscape and Urban Design. These measures have subsequently been divided up into the four landscape character precincts described in the introduction. The Urban and Landscape Design concepts for each character precinct, are described on the subsquent pages,

This is to ensure that the measures provided directly respond to the character within which they are located.



	Moggill Creek Floodplain	Gem Road Spur	Kenmore Road to Gem Road Open Space Corridor	Kersley Road Gully
LANDSCAPE DESIGN	• Dense tall tree planting to and around the Moggill Road connection. The planting works here would adopt a bushland regeneration approach utilsing the existing endemic tree cover within the local area. • Riparian and mangrove habitat regeneration along Moggill Creek at the bridge crossing and within the area between the road and the creek to the north of the road between chainages 3400-3700. Combine with the low planting to the north of the road allowing views from the bypass corridor to Moggill Creek. • Investigate potential for off site tree planting program (between BCC and DMR) in the Rafting Ground Reserve. • On the south side of the bypass between chainages 3400-3700, dense tall tree planting between Moggill Creek and the start of the Gem Road Spur. The pony club area could be utilised for offset planting or, as a minimum, planting works should be undertaken to screen views of the road and noise walls for users of the club and residents along Yarrawa Street. Note for planting to occur on embankments, the embankment structure would ideally need to at a maximum grade of 1 in 2.5. • Seek soft or hard landscape measures to provide visual separation between the road and shared user path.	• Existing edge tree planting to be retained as far as possible through this section, with particular due consideration of the existing vegetation on the back of the properties at Summerfield Place and Parkway Place. • Dense tall tree planting should be incorporated along the entire northern and southern flank of the bypass through this precinct as far as possible, mimicking the existing native planting that already exists here and adopting a bushland regeneration approach. • Off site tree planting program for the residential properties around Sachs Court should be adopted that allows tree planting works to be incorporated onto the property boundaries to visually screen the noise walls. • Cutting treatment to be preferably exposed bedrock or green (depending on the outcomes of the geotechnical investigations). Alternatively, where space allows, investigate a benching system that allows planting on the individual benches. Refer to Chapter 4 for details. • Seek soft or hard landscape measures to provide visual separation between the road and shared user path.	• Given there is very limited or no space between the property boundaries and the Bypass proposal, existing property boundary tree planting should be retained as far as possible through this section (refer to additional mitigation opportunities in section 4.5 on tree planting through this precinct). • Upgrade Twilight Street and Marland Street Parks for the local community, providing new facilities such as a playground, BBQ and shelter, new footpaths and sport equipment. • Provide native feature, formal planting to accentuate the preferred pedestrian bridge option. • Off site tree planting program for the residential properties on the south side of Marland Street and the north side of Twilight Street should be adopted that allows tree planting works to be incorporated on the property boundaries to visually screen the noise walls and retaining walls. • Seek soft or hard landscape measures to provide visual separation between the road and shared user path.	• Dense tall tree planting should be incorporated along the entire northern and southern flank of the road through this precinct as far as possible, mimicking the existing native planting that already exists here and adopting a bushland regeneration approach. Note for planting to successfully establish along the embankment it should ideally to be at a maximum grade of 1 in 2.5. • Dense tall planting to the interchange to frame the proposed structures. • Cutting treatment at Kenmore Road preferably to be, exposed bedrock (depending on the outcomes of the geotechnical investigations). Alternatively, where space allows, use a green cutting treatment, using a benching system to allow planting in the cutting on individual benches. Refer to Chapter 4 for details. • Seek soft or hard landscape measures to provide visual separation between the road and shared user path.
URBAN DESIGN	• Provide a bridge structure that is responsive to the rural character of the existing area. The design of the structure should be light weight and “tread lightly” across the waterway e.g. separate structures for individual carriageways, no piers in the waterway, planted abutments. Refer to Chapter 4 for details. • As compensatory mitigation measures provide a shared user path connection between the road and the Rafting Ground Reserve (two possible options are illustrated on the Urban Design Concept on the next page). • Utilise transparent materials in the noise walls, particularly in the upper components of the walls to lighten the visual mass of the structures.	• As compensatory mitigation measures provide a shared user path connection between the road and the Rafting Ground Reserve (two possible options are illustrated on the Urban Design Concept on the next page). • Utilise transparent materials in the noise walls, particularly for the upper components of the walls to lighten the visual mass of the structures and avoid over shadowing of properties to the south of the bypass proposal. • Urban design treatment and planting to the top of the retaining structures. Refer to Chapter 4 for options to integrate the walls.	• Utilise transparent materials in the noise walls, particularly in the upper components of the walls to lighten the visual mass of the structures and avoid over shadowing of properties to the south of the road proposal i.e. along Twilight Street. • Use urban design treatment and planting at the base of the retaining structures (ie. climbers) that would grow over the wall. Refer to Chapter 4 for the options to integrate the walls. • The pedestrian bridge is to be utilised as a key visual cue for both the road users and for the adjacent community.	• The design of the Centenary Motorway bridge structure is a recessive, inconspicuous crossing over the highway. The intersection urban design works should reinforce the proposed local connection node idea. • Urban design treatment and planting at the base of the retaining structures using climbers that could grow over the wall. Refer to Chapter 4 for the options to integrate the walls.

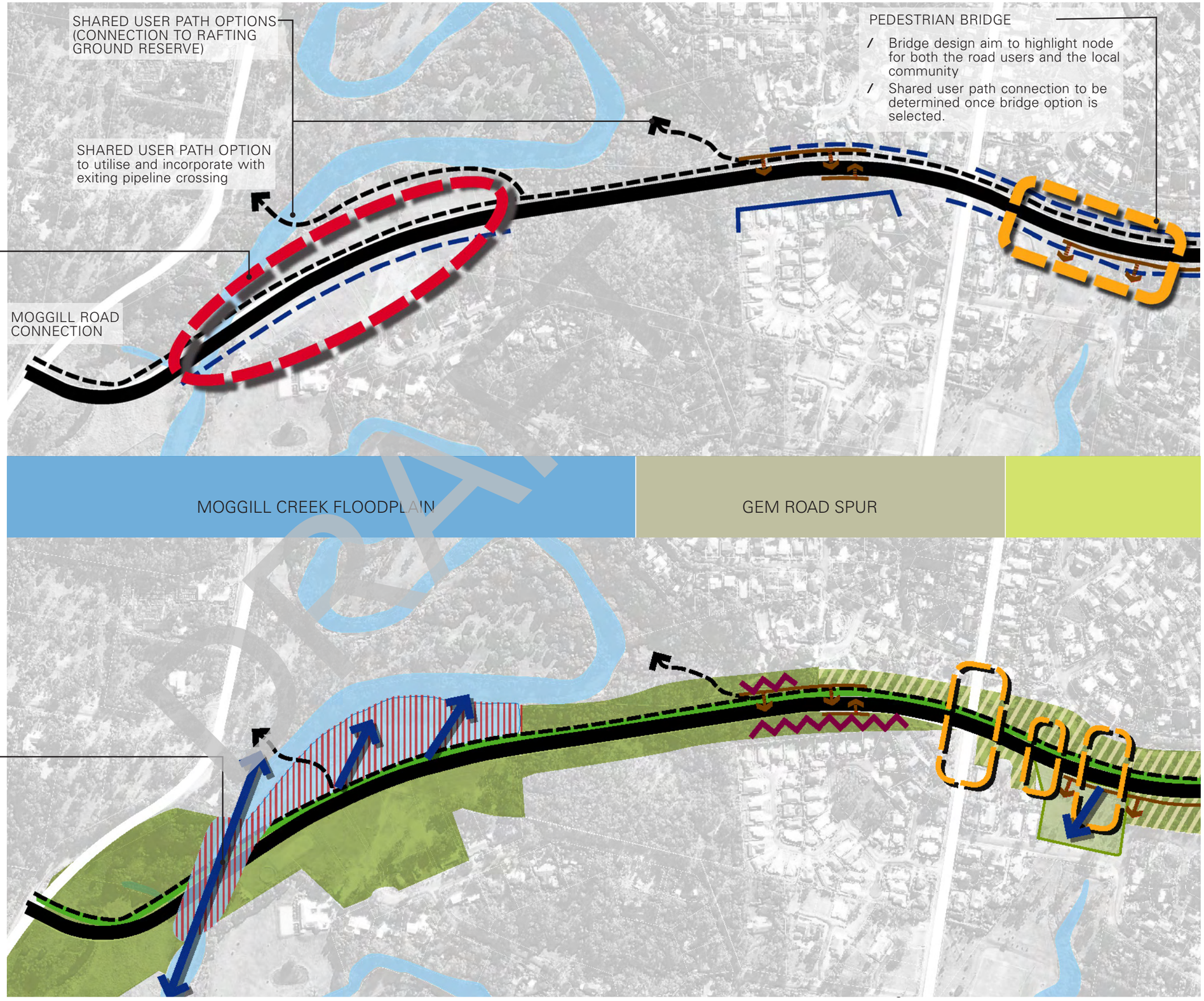
MOGGILL CREEK BRIDGE CROSSING

Bridge Design Aim:

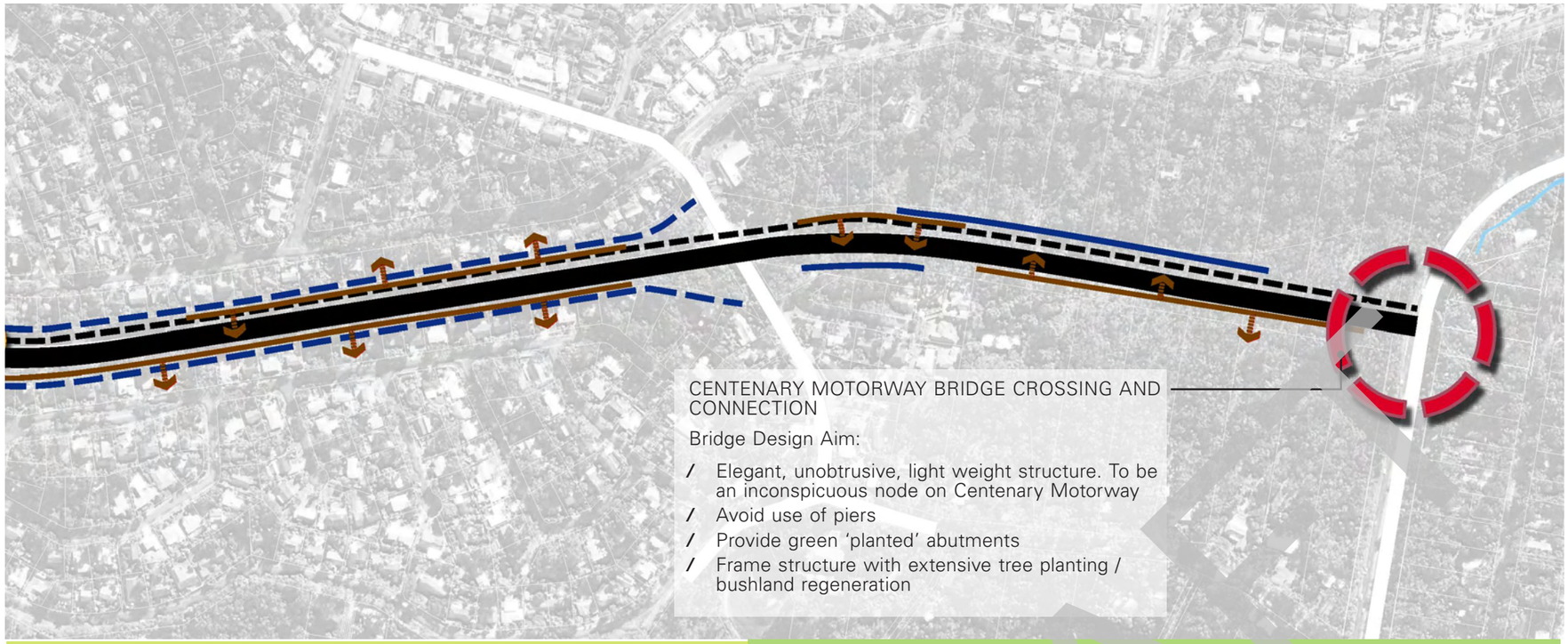
- Lightweight structure
- Separate lanes into individual structures
- No piers into waterway
- Green abutments to be planted
- Fauna under pass to be incorporated - details in Ecology Report

MOGGILL CREEK

- Riparian and Mangrove habitat restoration. This will help filter views of the road corridor
- Under bridge crossing, landscape design to be in line with fauna crossing requirements



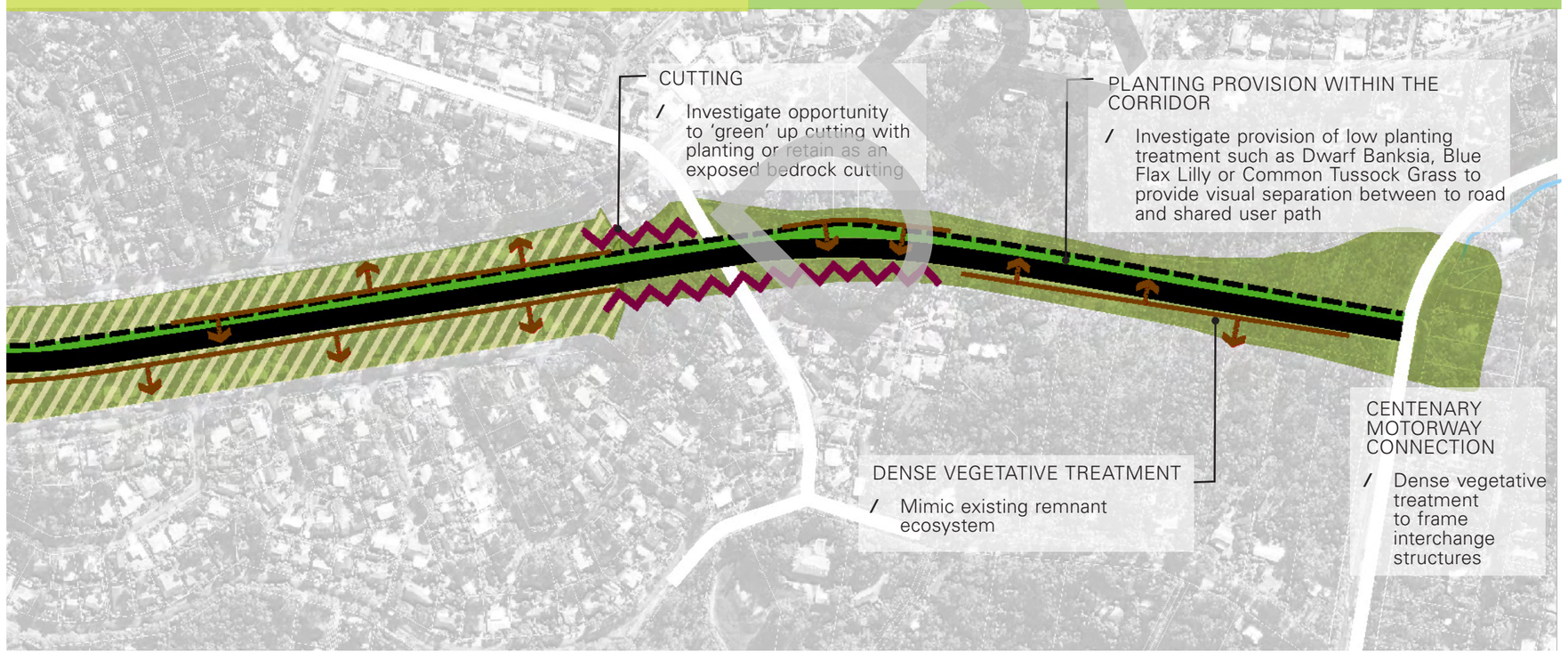
URBAN DESIGN CONCEPT



Legend

- Proposed Road Alignment
- Shared User Path
- Opportunity for Additional Shared User Path Connection
- Solid Noise Wall
- Opportunity to incorporate transparent panels to Noise Walls
- Retaining Walls
- Pedestrian Bridge Location (to be determined)
- Bridge Structures

LANDSCAPE DESIGN CONCEPT



Legend

- Proposed Road Alignment
- Shared User Path
- Dense Tall Tree Treatment (when on embankment - the embankment to be a maximim gradient of 1:2.5)
- Low Shrub/Grass and Groundcovers Treatment
- Riparian Habitat Regeneration
- Private Property Planting Program
- Feature 'Formal' Planting to Selected Bridge
- Green/Exposed Bedrock Cutting
- Key Views from the Road Corridor

0 50 100 150 200 250 500m

3.3 THE DRIVER EXPERIENCE

The driver experience is based upon both the preferred concept engineering and landscape and urban design concept scheme. It is illustrated in the image on the opposite page.

The experience aims to utilise a number of the proposed engineering structures and breaks in the noise barriers as landmarks and visual cues along the corridor for the driver to orientate himself and break up the journey experience.

The key visual cues are:

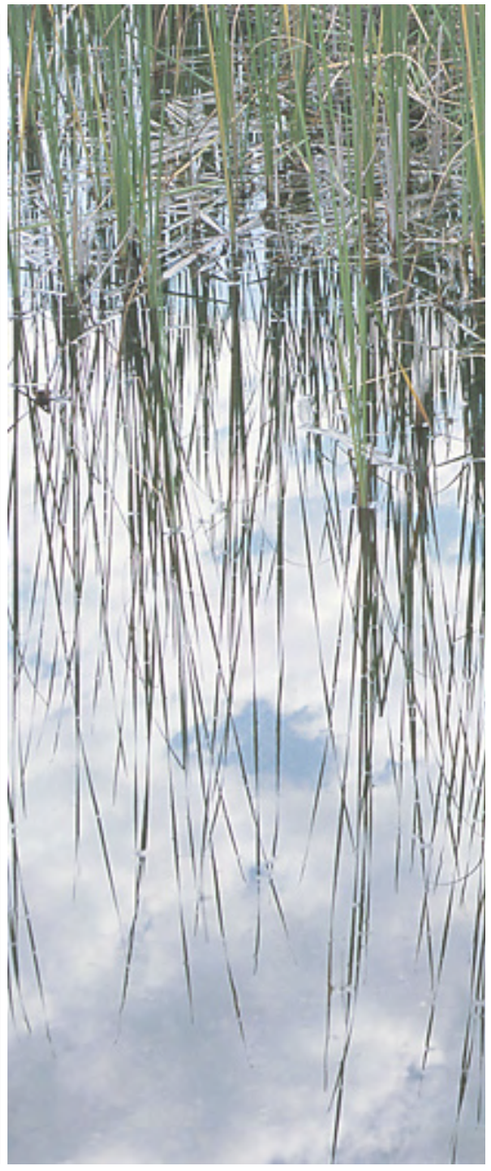
- The pedestrian bridge: The bridge structure itself will be a highlight feature at the mid point of the corridor. The structure will be further highlighted by feature formal themed planting works.

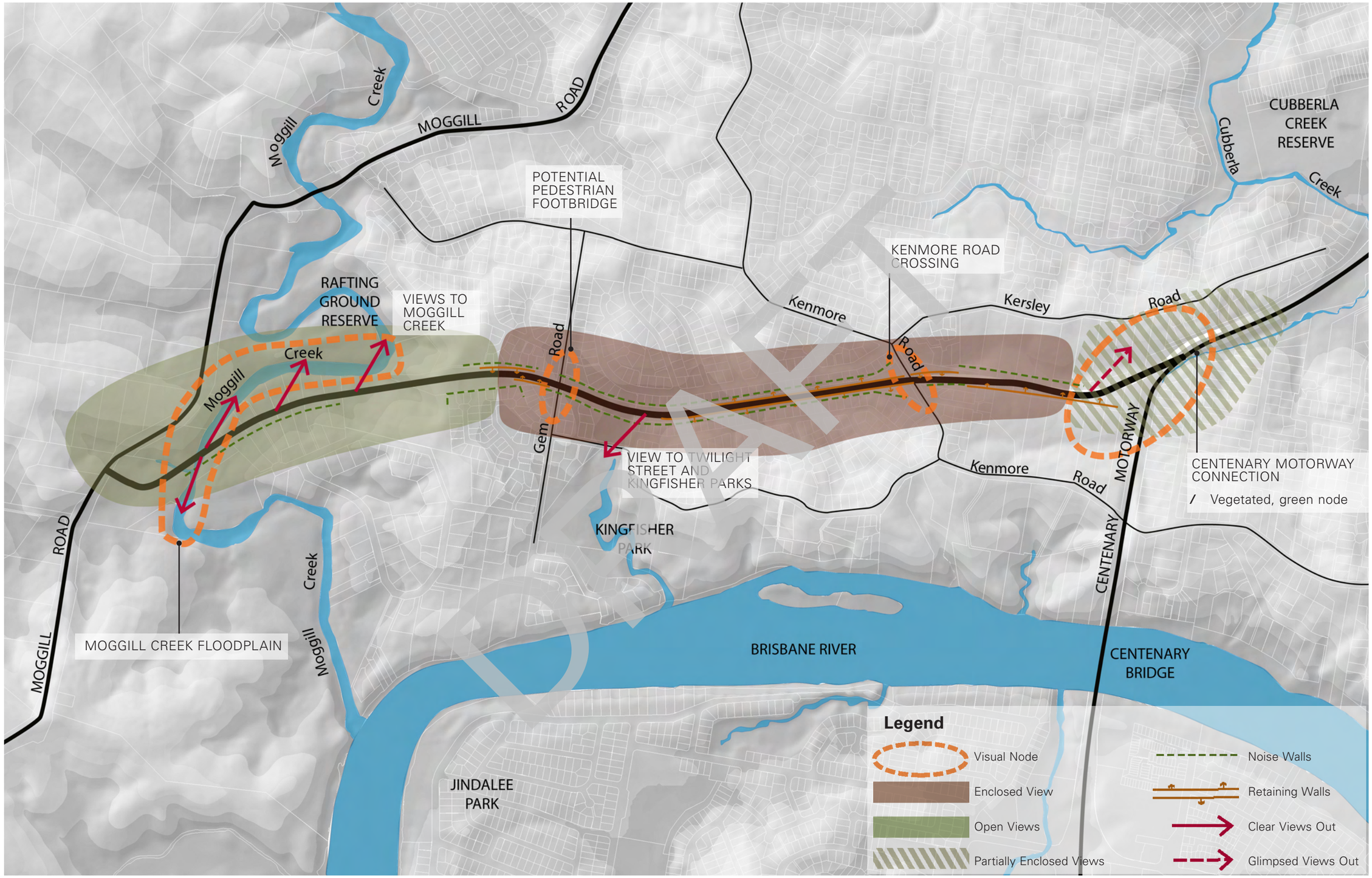
- Kenmore Road crossing: This will be a subtle highlight node, nestled into a bushland landscape that is enhanced with extensive planting to visually assimilate the overhead structure.

- Moggill Creek Floodplain

  - Northern part of Moggill Creek floodplain. Along this section of the embankment there will be no noise walls and therefore the views will naturally be allowed across and into the floodplain from the east bound carriageway.

  - Moggill Creek: As no noise walls are at this crossing point, again the viewer from both the west and east bound carriageways will naturally be allowed a few to the waterway.




MOGGILL ROAD
Moggill Creek
POTENTIAL PEDESTRIAN FOOTBRIDGE
KENMORE ROAD CROSSING
CUBBERLA CREEK RESERVE
Cubberla Creek
RAFTING GROUND RESERVE
VIEWS TO MOGGILL CREEK
Kenmore Road
Kersley Road
Gem Road
VIEW TO TWILIGHT STREET AND KINGFISHER PARKS
KINGFISHER PARK
MOTORWAY
CENTENARY MOTORWAY CONNECTION
/ Vegetated, green node
Kenmore Road
MOGGILL ROAD
MOGGILL CREEK FLOODPLAIN
Moggill Creek
CENTENARY
BRISBANE RIVER
CENTENARY BRIDGE
JINDALEE PARK
Legend
Visual Node
Enclosed View
Open Views
Partially Enclosed Views
Noise Walls
Retaining Walls
Clear Views Out
Glimpsed Views Out

04

Specific Visual Integration Measures

4.1 LANDSCAPE TREATMENTS

Dense tall tree planting design intent

- To screen or soften unattractive or undesirable views of the road infrastructure such as the noise walls and interchanges through dense tall edge treatment of native shrubs and trees.
- To create naturally regenerative and resilient endemic ecosystems.
- To mimic the existing character of naturally occurring vegetation such as bushland.
- To visually link with existing vegetation thus forming natural extensions to existing vegetation.
- To adopt revegetation and regeneration ecological restoration approach.
- To retain existing corridor edge planting as far as possible, concentrating on minimising the construction activities in areas where private properties abut the corridor.

Low Shrub / ground cover and grass planting design intent

- To break up the visual mass of the road for the drivers and shared user path users through the provision of a low informal vegetative treatment between the road and shared user path. Opportunities should be sought to replace the concrete barrier between the road and shared user path with a 1.5 metre wide strip for the brifen wire rope and planting treatment.
- To soften embankment structures and allow views for road users to key visual nodes i.e. Moggill Creek, whilst also providing a low maintenance solution.
- To adopt revegetation and regeneration ecological restoration approach.

Feature formal planting design intent

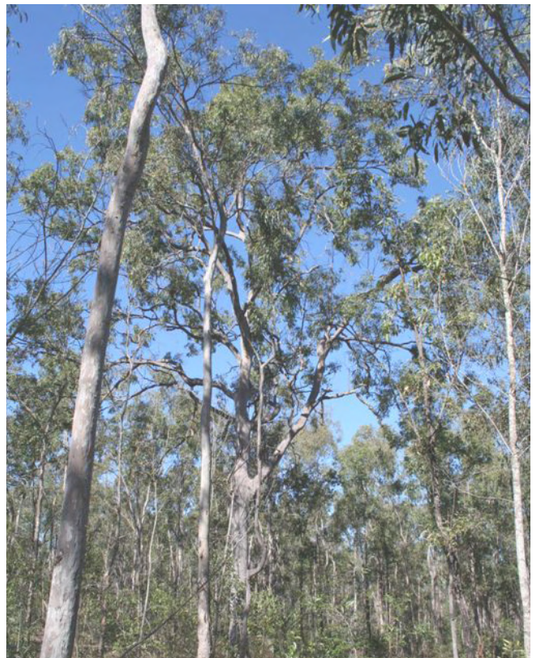
- To provide feature accent planting to enhance the character of key nodes and provide a structured contrast to other planting works in the corridor i.e. at the pedestrian bridge crossing.
- To provide shade (and shade ways) for the pedestrian and cyclists on the shared user path / access to the bridge crossing.

Riparian Habitat design intent

- To rehabilitate, enhance and extend existing riparian habitats that exist within the propose road corridor.
- To create naturally regenerative and resilient endemic ecosystems.
- To adopt revegetation and regeneration ecological restoration approach to establish riparian habitats.
- To create a highlight node or accent along the road corridor, contrasting with other planting works. Views are permitted to the creek environments from the carriageways as no noise walls are required in these locations.
- To apply riparian habitats to swales and drainage channels to create more naturalised appearance with maximum side slope of 1:3. The form of the longitudinal alignments of these elements should be gentle meandering forms to reflect natural landform.

Private property planting program design intent

- To provide tree planting for local residents private gardens to screen views of the road proposals, in particular the noise walls and retaining structures.
- Planting limited to those properties which back directly onto the road corridor i.e. Marland Street, Twilight Street, Sachs Close, Plumeria Close, Lois Street.



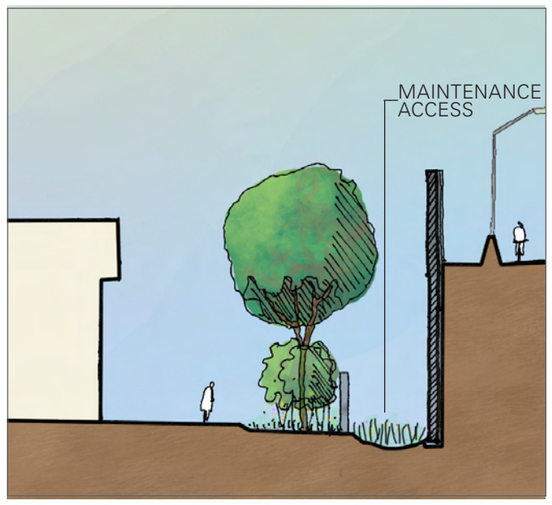
4.2 NOISE WALLS

- To be designed in accordance with Section B4 of the QDMR Road Landscape Manual.
- To utilise urban design treatments such as relief / patterned concrete that respond to local context. Community consultation mechanism to determine appropriate pattern treatments.
- To provide planting in front and behind the noise wall (allow a minimum of a 1.5m wide strip on either side of the wall) where space permits. Where the road corridor is constrained and planting cannot be implemented in front or behind the noise wall, visually integrate concrete crash barriers into the overall noise wall through design, colour and patterning.
- To be designed so that visual mass and over shadowing impacts are reduced. Possible use of transparent panels to enhance vista or reduce visual weight.
- Avoid duplication of noise wall infrastructure e.g. duplicating noise walls and garden fences in the same location. In the case of Marland and Twilight Street investigate the option to transfer the property boundary to the edge of the embankment or retaining structure, with an easement covenant allowing temporary access to DMR should works be required. The easement would need to be designed with removable fences and frangible planting, but would ultimately be maintained by the private property owners. (Refer to cross sections through chainage 2050.)

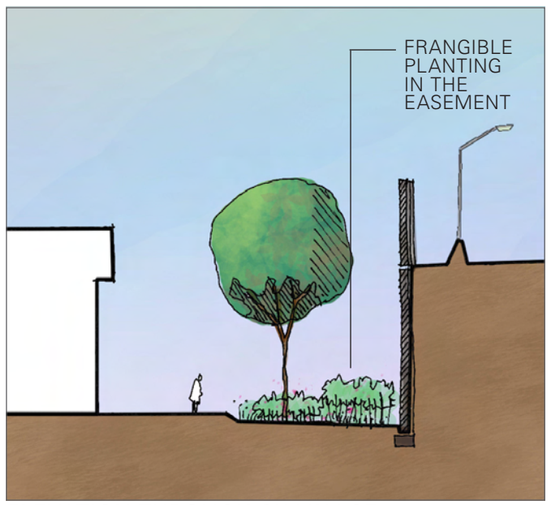
RELIEF/PATTERNED CONCRETE TREATMENT

A COMBINATION OF TRANSPARENT AND CONCRETE NOISE WALL

PROVISION OF TRANSPARENT NOISE WALLS WITH PLANTING AT THE BASE



ELEVATION THROUGH CHAINAGE 2050: DUPLICATION OF NOISE BARRIER AND FENCE LINE



ELEVATION THROUGH CHAINAGE 2050: REMOVAL OF PROPERTY FENCE LINE

4.3 BRIDGES

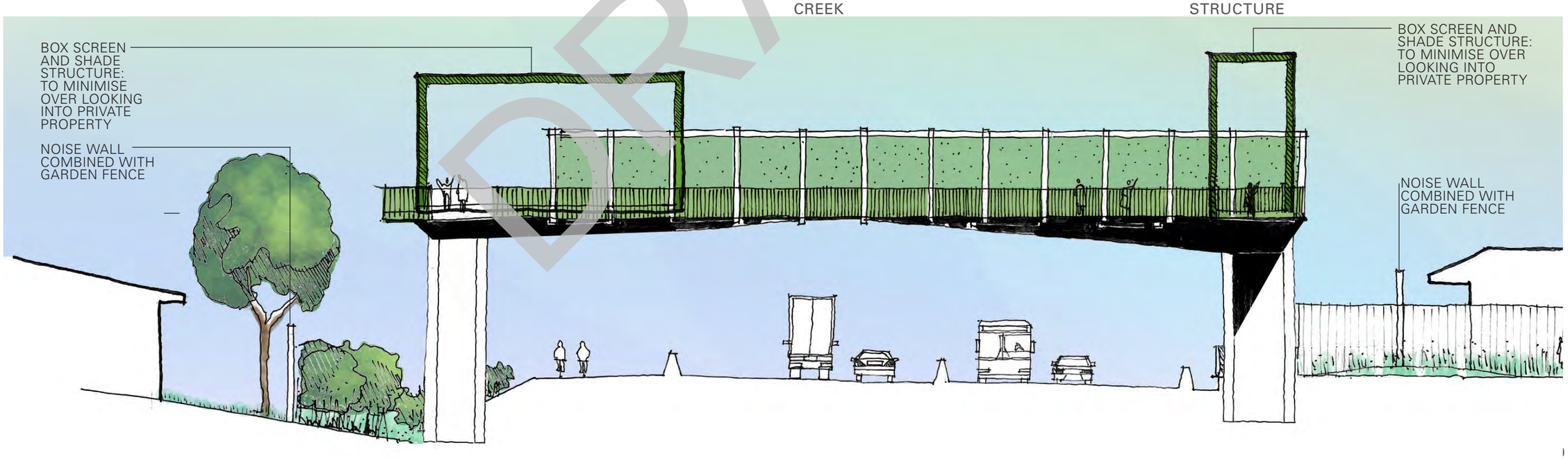
Road Bridges include: Centenary Motorway, Kenmore Road and Moggill Creek

Pedestrian Bridge: one bridge around the Gem Road location (location and option to be determined)

- Reduce the visual mass of the road bridge structures. To achieve this, the bridge designs should be evenly proportioned, simple, unified, uninterrupted, of rational order and rhythm (not necessarily symmetrical), slender and light weight structures.
- Create unified structures through visual integration of bridge components, for example the piers and headstocks, the sofit and deck and the throw screens and concrete barrier. "A bridge is a whole not an assemblage of parts."(Bridge Aesthetics: RTA).
- Develop customised urban design treatments for throw screens, parapets, and piers for the pedestrian bridge that respond to the local setting.
- Design the pedestrian bridge so that views into private property boundaries are avoided.
- Use planting to screen abutment walls and/ or apply urban design treatments to the walls that respond to the local setting.
- Reduce the leading edge and the visual mass of the piers for example throug piers.
- Use custom parapet profiles to conceal services in exposed structures.
- Use visually light weight crash barriers such as the brifen wire rope instead of concrete crash barriers. (subject to safety review)

EXAMPLE OF A BRIDGE CROSSING OVER A CREEK

EXAMPLE OF A PEDESTRIAN BRIDGE SHADE STRUCTURE



4.4 EARTHWORKS

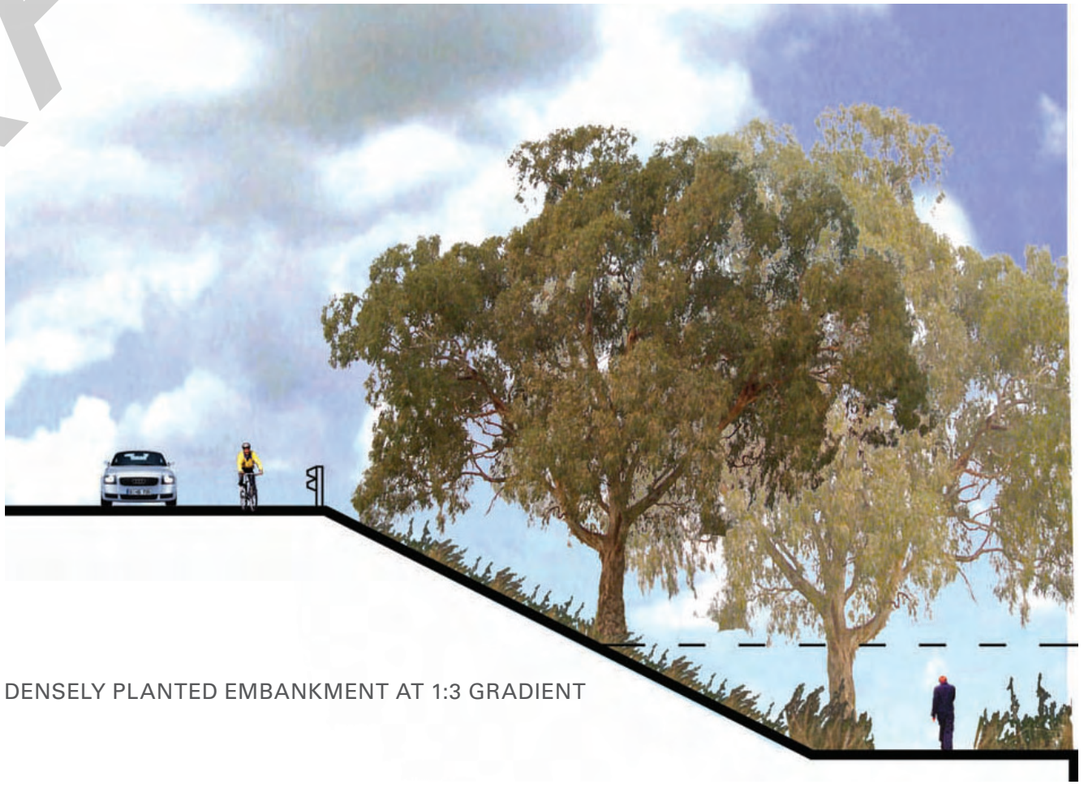
- Embankments and cuttings to be designed with natural treatments where possible. Landscape treatments should be used to soften top of cut batters.
- Embankments and cuttings to be planted with landscape treatments or left as exposed bedrock (subject to Geotechnical investigations). Shotcrete should be avoided. It can be used to stabilise small unstable “seams” (see image). Follow the RTA ‘s Shotcrete Design Guidelines (June 2005).
- Spill through abutments to be treated with local stone and planting where appropriate.
- Where space allows grade out the earthworks with a varied gradient. The maximum gradient should be 1:2.5 Reference: QDMR, Road Landscape Manual, Integrated Road Design Part B.
- Use benching, where land use constraints require steeper cuttings and embankments benching on gradients over 1:2.
- Incorporate urban design treatments such as relief /patterned concrete or natural stone walling that responds to the local context to retaining structures.

PLANTING TO ABUTMENT

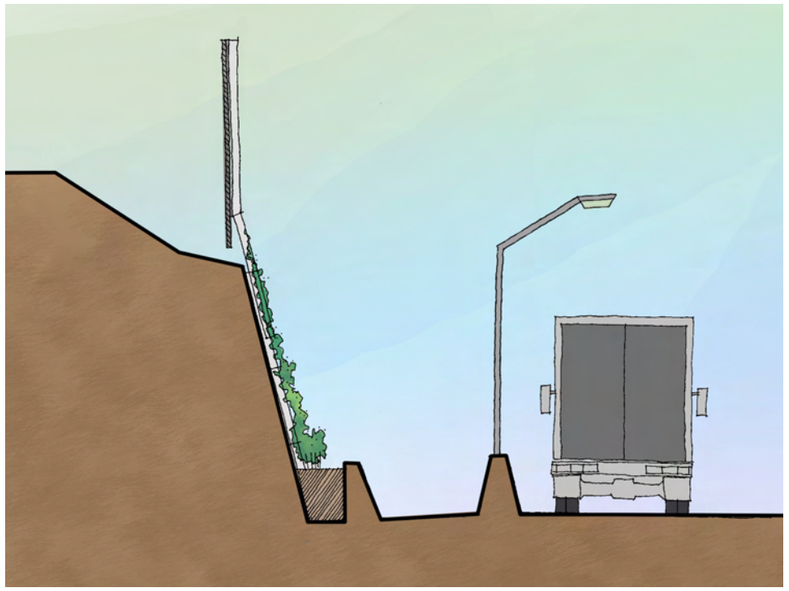
EXPOSED BEDROCK ROCK CUTTING: PREFERRED OPTION FOR CUTTINGS AT KENMORE ROAD AND GEM ROAD SPUR

EXPOSED ROCK CUTTING WITH SEAM OF SHOTCRETE. (FROM RTA’S SHOTCRETE DESIGN GUIDELINES 2005)

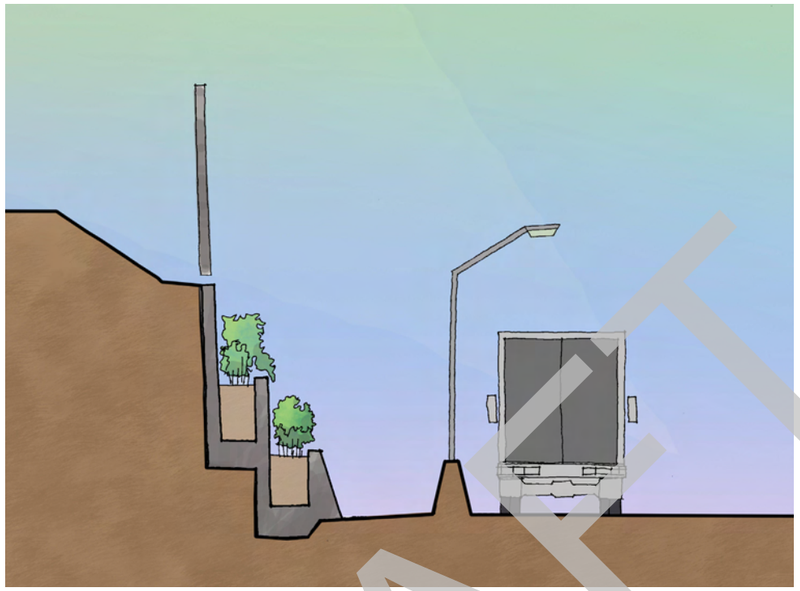
STONE TO ABUTMENT (preferably local stone)



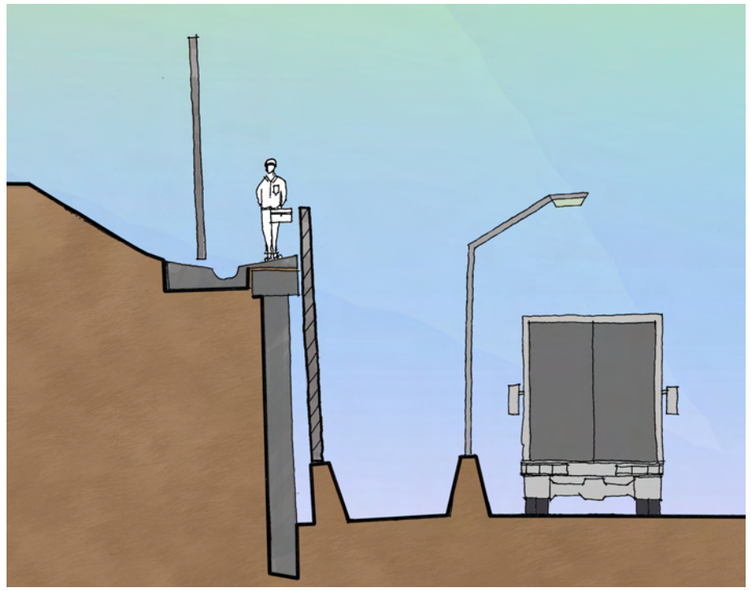
DENSELY PLANTED EMBANKMENT AT 1:3 GRADIENT



STEEP CUTTING/EMBANKMENT: STEEL FRAME WITH PLANTING



STEEP CUTTING/EMBANKMENT: BENCHING WITH PLANTING



PATTERNED CONCRETE TO VERTICAL RETAINING WALL