



Chapter 1.0 - Introduction

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Table of Contents

1.0	Introduction	1-1
1.1	Background	1-1
1.2	Project Description	1-1
1.3	EAR Objectives	1-3
1.4	Approach and Methodology	1-3
	1.4.1 Approach	1-3
	1.4.2 DMR Environmental Processes	1-3
	1.4.3 The Preserved Corridor	1-5
	1.4.4 Data Collection	1-8
	1.4.5 Assumptions	1-8
	1.4.6 Future Considerations	1-8
1.5	Outline of Works	1-9
1.6	EAR Structure	1-14
Appendix 1-A	Terms of Reference	1-A

List of Tables

Table 1.1: Assessment Requirements	1-4
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List of Figures

Figure 1.1: Study Area	1-2
Figure 1.2: Typical Area, Centenary Motorway to Kenmore Road	1-5
Figure 1.3: Typical Area, Kenmore Road to Gem Road	1-6
Figure 1.4: Typical Area, Gem Road Spur	1-7
Figure 1.5: Typical Area, Moggill Creek Floodplain	1-7
Figure 1.6: Schematic Representation of Planning Options	1-10
Figure 1.7: Centenary Motorway Interchange Options	1-12
Figure 1.8: Moggill Road Intersection Options	1-13
Figure 1.9: Gem Road Shared Path Overpass Options	1-14

1.0 Introduction

1.1 Background

The Kenmore Bypass Project (KBP) corridor has been preserved by the Queensland Department of Main Roads (DMR) since the late 1970s. When preserved, the road corridor was surrounded by a semi-rural environment. However, significant portions of adjacent green field space has since been subjected to low density residential development. Consequently, the KBP's proximity to residential areas and community concerns ensured that this project would generate community interest.

In 2007, the KBP Preliminary Feasibility Study (GHD, 2007) determined that the KBP was a feasible solution to the long-term transport needs for the local Kenmore area and acknowledged that further detailed investigation and assessment was required. In 2008, DMR commissioned AECOM Australia Pty Ltd to develop an Environmental Approvals Report (EAR) for the KBP options identified as part of the Options Assessment phase. This phase of the KBP planning study utilised the results from the Preliminary Feasibility Study to further develop options for the KBP.

This report identifies and analyses the environmental elements associated with the proposed KBP.

1.2 Project Description

The proposed KBP is a 3km road connection located along the preserved corridor and will provide a new connection between the Centenary Motorway at Fig Tree Pocket and Moggill Road at Pinjarra Hills.

The study area for the EAR extends along the Centenary Motorway from the Brisbane River in the south to approximately 400m north of the Fig Tree Pocket Interchange and along the preserved corridor from the Centenary Motorway to Moggill Road at Pinjarra Hills in the west. The study area is illustrated in Figure 1.1.

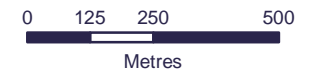
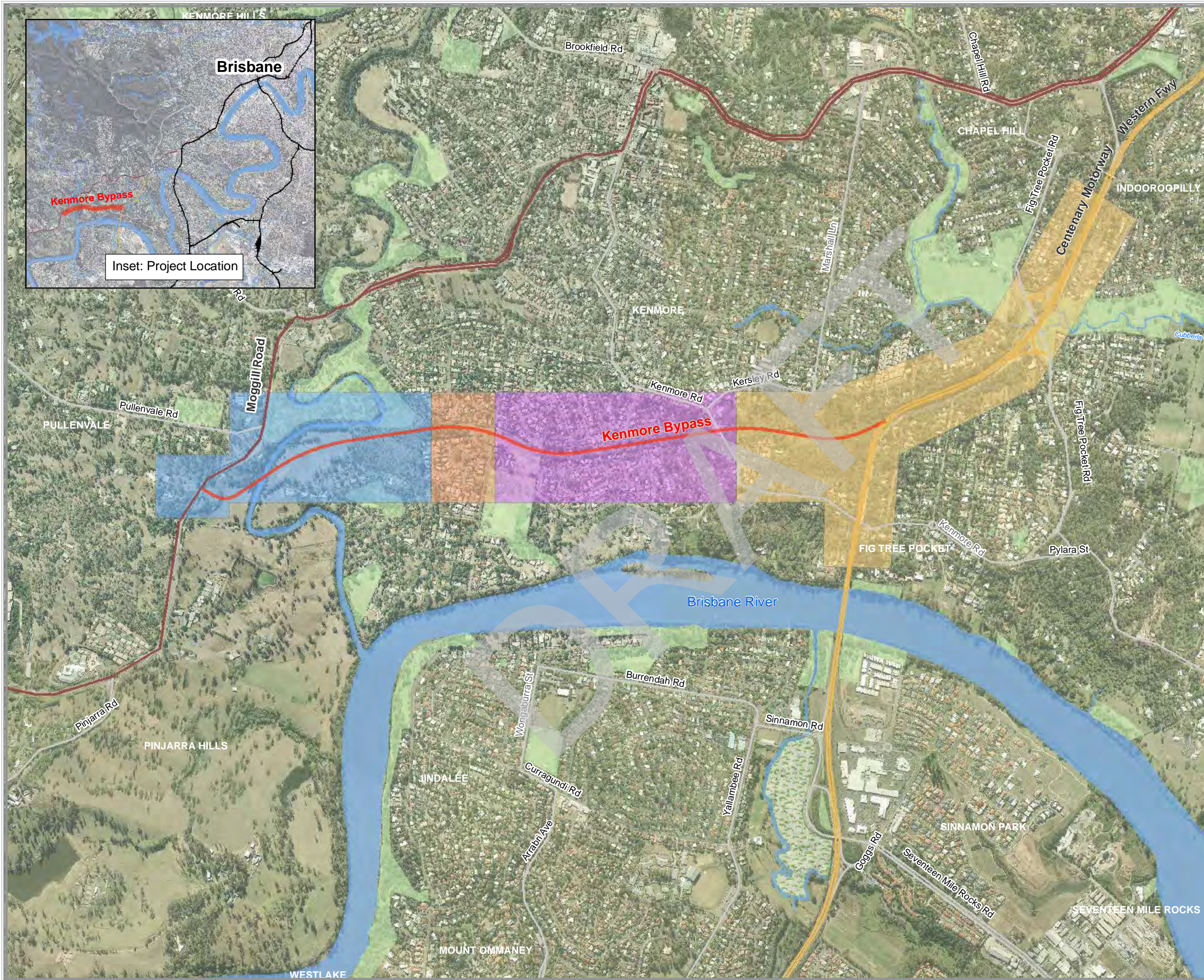
The Centenary Motorway is an existing 4 lane motorway servicing the western suburbs of Brisbane and Ipswich. The study area adjacent to the motorway is mainly characterised by low density residential areas.

From the Centenary Motorway, the preserved corridor traverses an area of large residential blocks until crossing Kenmore Road. The corridor then continues for approximately one kilometre from Kenmore Road to cross Gem Road. In this area, the corridor abuts the residential properties of Marland Street to the north and Twilight Street to the south.

To the west of Gem Road the corridor traverses a ridge, continuing to abut residential properties for approximately 200 metres before crossing the valley of Moggill Creek to join Moggill Road.

Key characteristics of the study area include:

- the Centenary Motorway;
- bushland to the east near Centenary Motorway;
- close proximity of houses along the corridor;
- a park in the vicinity of Gem Road;
- crossing the Moggill Creek Floodplain; and
- the catchments of Cubberla and Moggill Creeks.



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Date - 13 May 2009



Legend

- Centenary Motorway
- Kenmore Bypass
- Moggill Road

Sectors

- Centenary Motorway Interchange to Kenmore Rd
- Gem Road Spur
- Kenmore Road to Gem Road
- Moggil Creek Floodplain
- Park and Garden
- Sporting Ground
- Golf Course
- River/creek

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KENMORE BYPASS

Study Areas

Figure 1.1

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1.3 EAR Objectives

This EAR considers the environmental factors and optimisation of environmental outcomes for the KBP.

The purpose of the EAR is to:

- describe the values of each environmental element;
- identify any adverse environmental impacts associated with the construction and operation of the KBP; and
- propose mitigation strategies to remove (where possible) or minimise these impacts.

This EAR has been prepared as part of Stage 2 of the KBP Planning Study to highlight environmental factors to put in place the basis for EMPs to carry forward to the detailed design stage of the KBP, and initiate the Environmental Certification process.

1.4 Approach and Methodology

1.4.1 Approach

A consistent and clearly defined framework was established to evaluate the environmental impacts of the proposed KBP. This comprised the following tasks:

- relevant DMR environmental processes were identified and a Terms of Reference (ToR) was prepared and approved;
- areas to be affected by the KBP were defined;
- relevant data was identified (including existing, observed and surveyed data) and the relevance and accuracy of that data was determined; and
- future considerations for the KBP were identified.

These matters are discussed in the following sections.

1.4.2 DMR Environmental Processes

DMR's *Road Project Environmental Processes Manual* (RPEPM, DMR 2004) specifically supports the delivery of environmental outcomes for DMR road projects. It outlines the preferred processes for managing the environmental impacts of DMR road projects. This EAR was prepared in accordance with the RPEPM.

The RPEPM outlines the progression of environmental factors throughout the life of a project and indicates a series of reports, which correlate with various stages of the environmental processes. They are:

- Project Environmental Assessment Stage – Review of Environmental Factors (REF);
- Project Environmental Management Stage – Environmental Management Plan (Planning) (EMP (P)); and
- Project Environmental Certification Stage – Environmental Certification and Environmental Design Report – (EDR)

The information contained in these three reports has been combined in a single report termed an EAR. This EAR reflects the current state of development of planning for the KBP.

The first stage of the DMR environmental process for an EAR is the establishment of the appropriate level of assessment for a minimum of fourteen environmental elements. To satisfy this requirement, a ToR was developed using the process defined in Appendix C of the RPEPM and in conjunction with DMR officers. The ToR:

- identifies the issues and activities that are required be addressed within each element; and
- defines the appropriate level of assessment for each environmental element.

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A summary of the issues and levels of assessment for each element for the KBP is given below in Table 1.1. Appendix 1-A details the ToR.

Table 1.1: Assessment Requirements

Element	Recommended level of assessment	Rationale/Comment/Considerations
Legislative Requirements	NA	Identification of all relevant legislative and permitting requirements, including Commonwealth, Queensland and Local permitting requirements.
Water Quality	Moderate	The Centenary Motorway interchange will be constructed in the Cubberla Creek catchment and the KBP will be built in the Moggill Creek sub-catchment of the Brisbane River. Both creeks are monitored as part of EPA and Brisbane City Council (BCC) initiatives. There is a significant amount of data available concerning water quality. There is a catchment management group for Moggill Creek.
Hydrology and Hydraulics	High	The corridor traverses the floodplain of Moggill Creek and will need to be at elevated above flood levels. Any fill or structures used in this area will need to be modelled in some detail to assess any possible afflux impacts on flood waters.
Fauna	High	The preserved corridor has become a green space in the western Brisbane area. Particular attention should be given to identifying environmental values in the area and, as much as possible, to preserving them or mitigating impacts upon them.
Flora	High	
Topography, Geology and Soils	Low	There is the possibility of acid sulphate soils (ASS) in the low lying areas near Moggill Creek. The corridor has minimal prior use that would suggest any contaminated land issues.
Noise	High	The corridor is adjacent to significant areas of residential development. The construction and operation of a new road requires that a high level of acoustic assessment is undertaken.
Air Quality	Moderate	The KBP will be a new road traversing residential areas. This warrants detailed modelling of air quality and assessment impacts on sensitive receptors.
Land Use and Planning	Moderate	Although some resumptions may be necessary, the KBP is unlikely to alter zoning in the area. Moderate assessment is warranted.
Social and Economic Issues	Moderate	The KBP represents a significant change to transport patterns in the area and there may be some resumptions necessary. There is also the possibility of community severance around Gem Road.

Element	Recommended level of assessment	Rationale/Comment/Considerations
Landscape and Visual Amenity	High	Visual impact of the KBP will represent a significant alteration of existing environmental values.
Aboriginal and Historical Cultural Heritage	NA	A separate cultural heritage report for the KBP has been prepared by DMR.
Climate Change Impact	Moderate	The KBP has the potential to provide a beneficial impact to climate change through the more rapid movement of traffic. The impacts of construction and operation of the KBP on climate change and the relevant impact of climate change on the KBP should be investigated.

1.4.3 The Preserved Corridor

The corridor can be split into four distinct sections of the proposed KBP, namely:

- Centenary Motorway Interchange to Kenmore Road (Chainage 1150 – 1870);
- Kenmore Road to Gem Road (Chainage 1870 – 2850);
- Gem Road Spur (Chainage 2850 – 3200); and
- Moggill Creek Floodplain (Chainage 3200 – 4100).

Each section is described below.

Centenary Motorway Interchange to Kenmore Road

The preserved corridor commences at the Centenary Motorway and passes through a gully before it meets the ridge line followed by Kenmore Road. This section of the KBP is characterised by larger adjacent subdivisions and a disturbed open eucalypt forest. A typical area of this section is shown below in Figure 1.2.



Figure 1.2: Typical Area, Centenary Motorway to Kenmore Road

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Kenmore Road to Gem Road

The preserved corridor passes through a valley, where an ephemeral stream follows the corridor, predominantly on the southern side. Subdivisions on either side through this section have created suburban blocks that back onto the preserved corridor from Marland Street to the north and Twilight Street to the south. The preservation of the corridor has led to the creation of green space through this section, which is currently used as parkland, as shown in Figure 1.3. The BCC has declared parts of the corridor as a dog off-leash area. A parkland area has been created adjacent to the low point of this section, near Sunset Road bounded by Marland Street Park and Twilight Street Park (as designated by BCC (BCC 2008)).



Figure 1.3: Typical Area, Kenmore Road to Gem Road

Gem Road Spur

The preserved corridor traverses a significant ridge immediately to the west of Gem Road with a second spur further west of the ridgeline. Residential properties back onto the both sides of the preserved corridor. The corridor has been cleared immediately west of Gem Road extending into disturbed open eucalypt forest on the ridge and adjacent slopes down to the Moggill Creek Floodplain.

Figure 1.4 illustrates a typical area of this section.



Figure 1.4: Typical Area, Gem Road Spur

Moggill Creek Floodplain

Beyond the spur to the west, the preserved corridor traverses the floodplain of Moggill Creek. It crosses Moggill Creek at an angle as the watercourse meanders across the floodplain. The creek is tidal at the crossing. Currently the Yarawa Pony Club occupies a portion of the preserved corridor.

Figure 1.5 illustrates a typical area of this section.



Figure 1.5: Typical Area, Moggill Creek Floodplain

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1.4.4 Data Collection

AECOM undertook desktop studies to review background information relating to each environmental element identified. Each chapter identifies all the information collected via desktop studies. Examples of data collected via desktop studies include:

- Ecosystem Health Monitoring Program (EHMP) water quality data;
- groundwater hydrology information from Department of Natural Resources and Water (DNRW);
- Regional Ecosystems (RE) Mapping;
- threatened and endangered flora and fauna identified under Commonwealth and Queensland legislation;
- EPA Environmental Management Register (EMR) and Contaminated Land Register (CLR);
- climate information from the Bureau of Meteorology (BOM);
- EPA *Environmental Protection (Air) Policy 2008 (EPP (Air))*;
- cultural heritage sites identified in the Department of Natural Resources and Mines cultural heritage databases; and
- forecast traffic volumes.

In many cases, the data collected via desktop searches was verified by site visits and/or site surveys. Additionally, current data was collected during these visits. The preserved corridor was inspected numerous times in the period between August 2008 and January 2009. Each chapter identifies information collected via site visits and surveys. Examples of data verified during these site visits include:

- existing water quality;
- fauna types and locations;
- vegetation types and locations;
- hydrology of the area;
- soil types;
- existing noise levels; and
- existing traffic volumes.

1.4.5 Assumptions

A number of the environmental elements require a start date for accurate estimation of impacts. A key assumption for the development of this EAR was that the year of opening will be 2016 in line with the traffic forecasts available. Currently, the State Government has made no commitment to, and has no timeframe in place for the potential construction of the KBP, and as such, an actual start date for the project is yet to be determined.

1.4.6 Future Considerations

This EAR has been based on the options developed as part of Stage 2 of the KBP planning study and as such represents a snapshot in time. Any potential changes in design will need to be assessed as necessary. Similarly, it may be necessary to revisit matters included in this EAR prior to construction due to potential changes in legislation and approval requirements.

If the KBP reaches detailed design stage, elements that may require review include:

- hydrology and surface water drainage;
- noise mitigation measures;
- landscape and visual amenity; and
- the interface with the Centenary Motorway dependent on the outcomes from the Centenary Motorway Corridor Planning Study.

The passage of time, manifestation of latent conditions or impacts of future events may require further and subsequent data analysis and re-evaluation of the findings, observations and conclusions expressed in this report. Key changes that may warrant a review of the EAR include:

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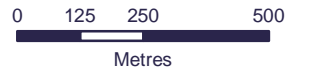
- significant modification to the design options;
- changes in the relevant legislation applicable to the project, including environmental law;
- significant changes in forecast traffic volumes on the KBP; and
- a significant shift in anticipated start date, currently assumed as 2016.

Responsible environmental management incorporates an ongoing review of processes and documentation to ensure they reflect the current state of the KBP and known environmental factors.

1.5 Outline of Works

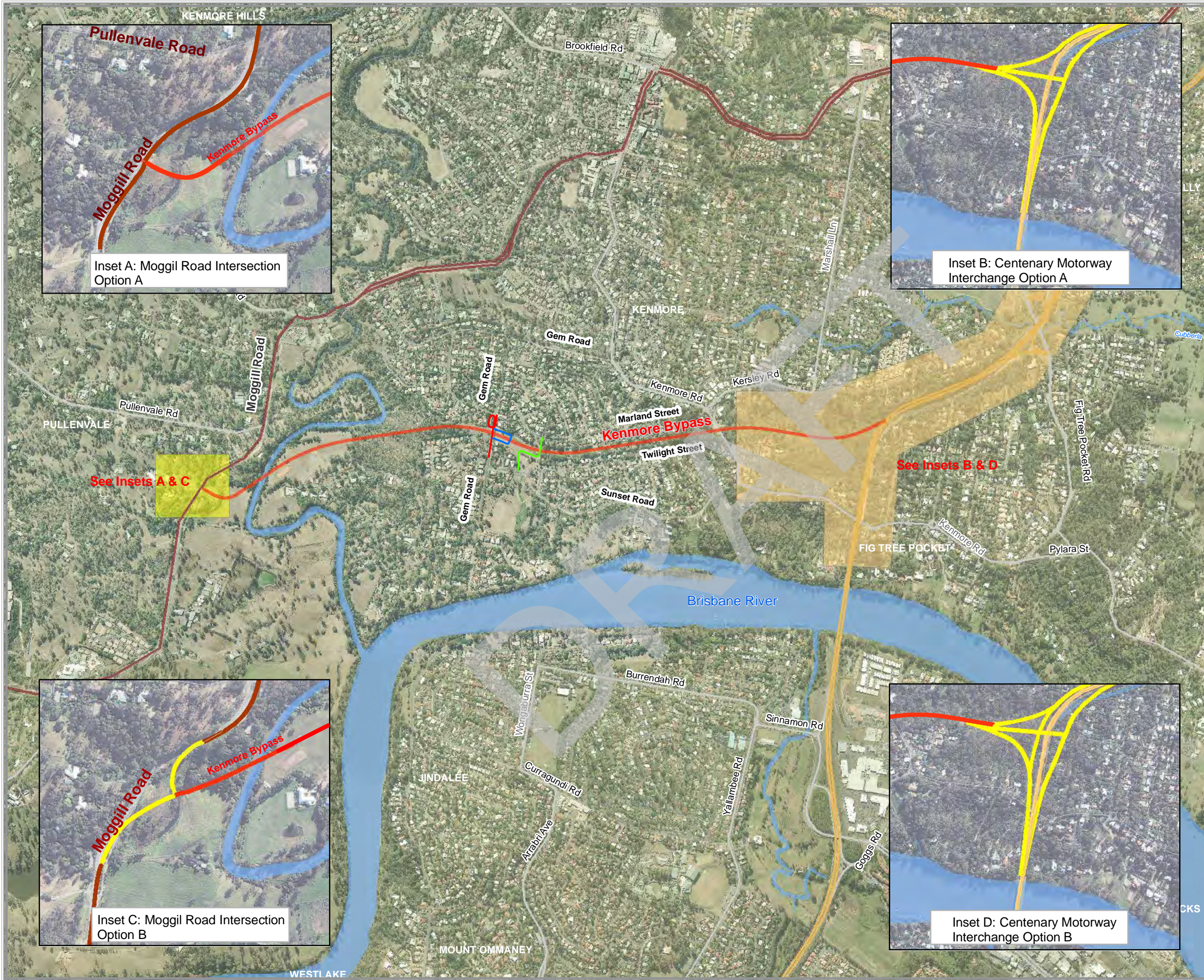
Planning options developed are based on a four lane (two eastbound, two westbound) alignment which follows the existing preserved corridor. Options connecting the KBP to the existing road and pedestrian/cycle network have been developed. The options developed are illustrated in Figure 1.6 and are described below.

Further information of the development of options can be found in the *Kenmore Bypass Options Analysis, Part One: Option Development Report* (AECOM 2009).



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Legend

Centenary Motorway

Kenmore Bypass

Moggill Road

River/creek

Junction Options

See Insets A and C

See Insets B and D

Pedestrian and cycle options

Option A

Option B

Option C

Data sources:
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**Schematic Representation of
Planning Options**

Figure 1.6

Centenary Motorway Interchange

Two planning options – Option A and Option B have been proposed for the Centenary Motorway interchange. The proposed Centenary Motorway interchange and the existing Fig Tree Pocket interchange are heavily inter-related and as such, options were developed for the combined interchanges. For simplicity, the combined interchange has been referred to as the Centenary Motorway Interchange.

Key features of Option A include:

- Fig Tree Pocket interchange is reconfigured; however the northbound off-ramp loop remains;
- Northbound KBP traffic joins the Centenary Motorway via the Fig Tree Pocket interchange;
- Southbound KBP traffic exit the Centenary Motorway after the Fig Tree Pocket interchange;
- Southbound Fig Tree Pocket interchange traffic joins the Centenary Motorway via the KBP interchange; and
- The KBP to Fig Tree Pocket Road movement is retained in both directions.

Key features of Option B Include:

- Fig Tree Pocket interchange is reconfigured;
- Northbound KBP traffic joins the Centenary Motorway via a separated ramp before Fig Tree Pocket interchange;
- Northbound Centenary Motorway traffic to Fig Tree Pocket exits at the KBP interchange and travels along a ramp, under the KBP to the Fig Tree Pocket interchange;
- Southbound Fig Tree Pocket traffic joins the Centenary Motorway via the KBP interchange; and
- There is no direct connection between KBP and Fig Tree Pocket Road in either direction.

The key differences between the options are:

- Option A allows for traffic access in both directions between the KBP and Fig Tree Pocket Road; and
- Option B allows for smoother traffic flow between the KBP and the Centenary Motorway by preventing access between the KBP and Fig Tree Pocket Road.

The options are illustrated below in Figure 1.7.

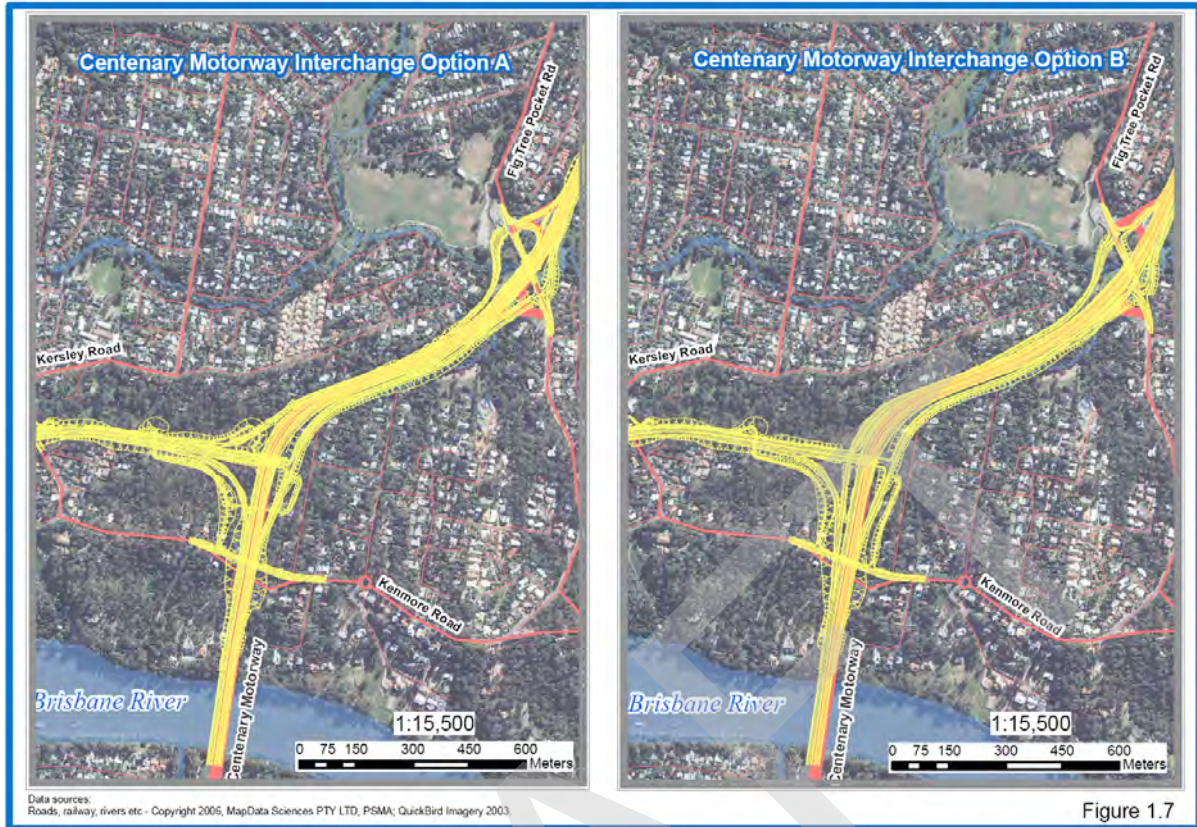


Figure 1.7: Centenary Motorway Interchange Options

Gem Road

The KBP passing through the existing Gem Road (i.e. separation of Gem Road) has been presented for community consultation. This is consistent with previous planning.

Moggill Road Intersection

Two planning options have been proposed for the Moggill Road intersection:

- Option A – Moggill Road Priority; and
- Option B – KBP Priority.

Both options allow movements in all directions and are at-grade signalised intersections. This is consistent with previous planning. The options are illustrated below in Figure 1.8.

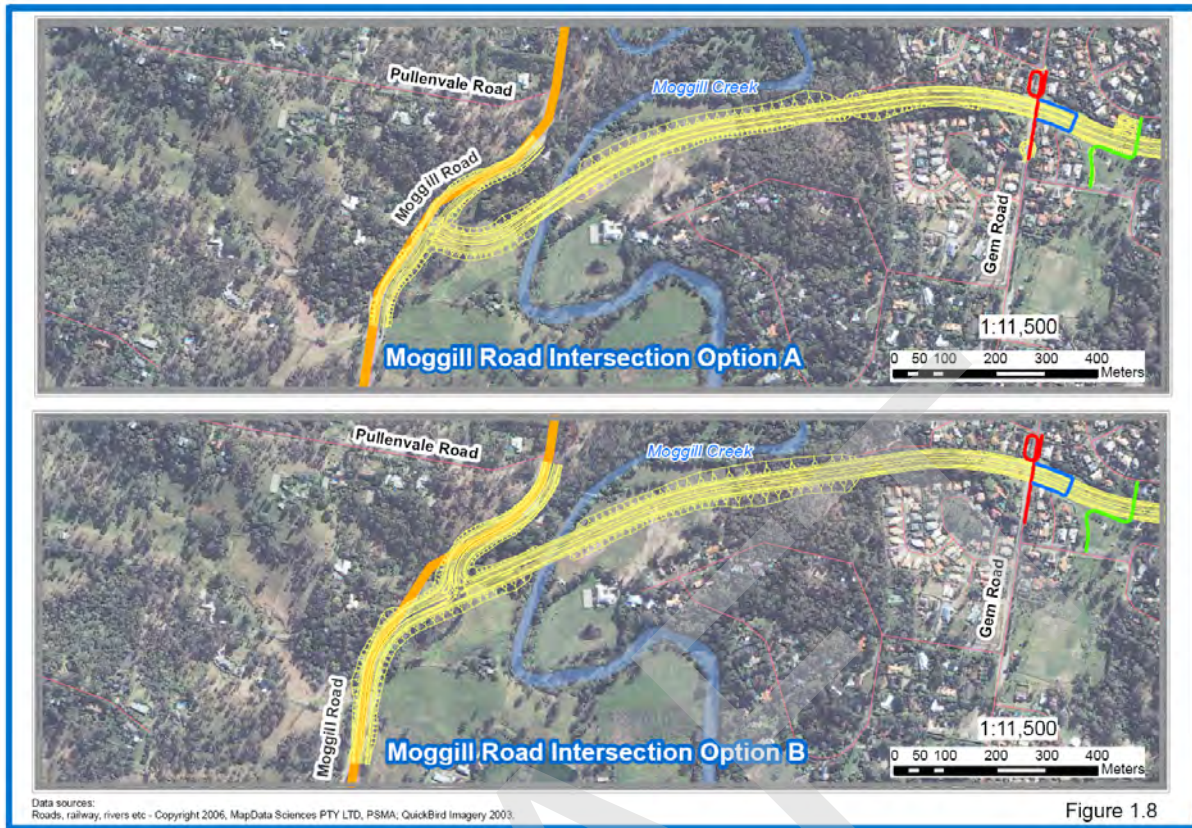


Figure 1.8: Moggill Road Intersection Options

Bicycles and Pedestrians

The planning options developed for the KBP provide for both on road cyclists and off road pedestrians and cyclists. Cyclists are permitted on the KBP through the provision of a wide shoulder, whilst off road pedestrian and cyclist facilities have been provided along the entire length of the KBP in the form of a recreational shared path.

The slopes of the existing topography of the corridor are often too steep for the shared recreational path to follow the existing ground levels. The proposed shared path will be at a similar level to the KBP. Currently, the shared recreational path has been proposed on the northern side of the KBP with access points at the following locations:

- Moggill Road – signalised intersection;
- Gem Road – dedicated shared recreational overpass with connections to Gem Road, Marland Street and Kingfisher Park / Sunset Road;
- Kenmore Road – ramp up to Kenmore Road, adjacent to the Kenmore Terrace Shopping Centre; and
- The Centenary Motorway Bicycle Route.

Three options for the Gem Road overpass have been presented to the community for feedback and are illustrated below in Figure 1.9.

It should also be noted that the current Centenary Motorway interchange options have differing connections for the KBP shared path to the Centenary Motorway Bicycle Route, however both options include a grade separated crossing of the KBP northbound on ramp.

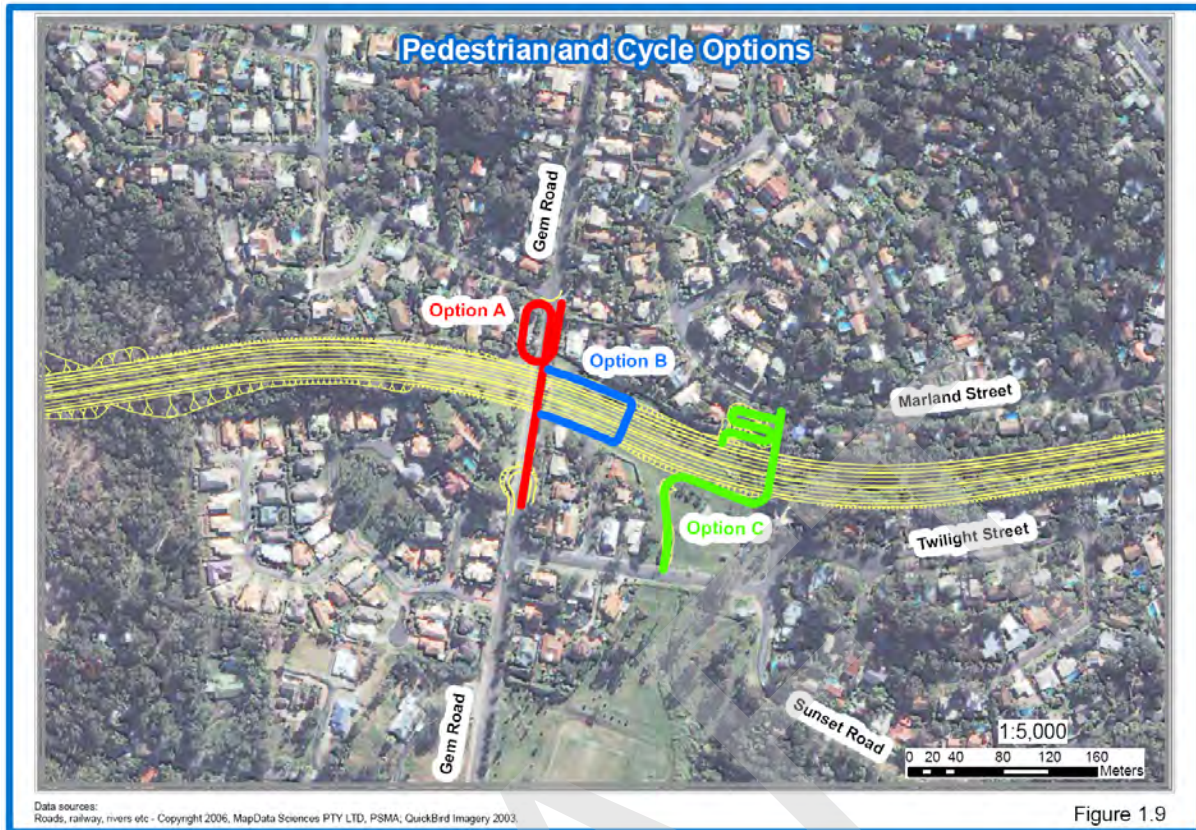


Figure 1.9: Gem Road Shared Path Overpass Options

1.6 EAR Structure

This EAR has been prepared as a series of chapters that assess the environmental elements listed in the ToR and has been structured as follows:

- Chapter 1 – Introduction;
- Chapter 2 – Legislative Framework;
- Chapter 3 – Surface Water Quality;
- Chapter 4 – Groundwater;
- Chapter 5 – Hydrology and Hydraulics;
- Chapter 6 – Fauna Assessment;
- Chapter 7 – Flora Assessment;
- Chapter 8 – Topography, Geology and Soils;
- Chapter 9 – Noise;
- Chapter 10 – Climate and Air Quality;
- Chapter 11 – Land Use and Planning;
- Chapter 12 – Socio-Economic Impact Assessment;
- Chapter 13 – Landscape and Visual Amenity Assessment;
- Chapter 14 – Cultural Heritage;
- Chapter 15 – Climate Change Assessment;
- Chapter 16 – Planning for Environmental Management; and
- Chapter 17 – References.

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The assessment of each environmental element includes:

- a detailed description of existing environmental values; and
- an analysis of potential impacts and outcomes, and possible mitigation strategies.

Chapter 16, Environmental Planning and Management is a precursor to the Environmental Management Plans (EMP) that may be generated at future stages of the KBP. It forms the basis of an environmental issues and approvals register for future design stages.

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