3. Strategic justification

This chapter describes the strategic need, justification and objectives for the project.

DGRs	Where addressed
Strategic justification	
Describe the strategic need, justification and objectives for the project (including performance indicators), and consistency with the aims and objectives of the relevant National and State planning policies and provisions, such as the *National Land Transport Plan (Auslink)* and *State Infrastructure Strategy — New South Wales 2006-07 to 2015-16*.	Chapter 3.

3.1 Strategic need

The Hume Highway is the main road freight corridor between Sydney and Melbourne, carrying over 20 million tonnes of road freight every year. In addition, the corridor is an important part of the NSW State and regional road network. The Hume Highway is 807 kilometres in length from Sydney to Melbourne — 517 kilometres in NSW and 290 kilometres in Victoria. The section of the highway in Victoria is entirely dual carriageway. Within NSW, dual carriageway conditions are over 80 per cent complete.

The existing single carriageway sections of the Hume Highway are all located between Sheahan Bridge (Gundagai) and Albury and dual carriageway construction is underway at several locations. Completion of the dual carriageway for the remaining 20 kilometres — comprising the proposed town bypasses of Tarcutta, Holbrook and Woomargama — would provide consistent dual carriageway conditions along the entire Hume Highway from Sydney to Melbourne.

3.1.1 *AusLink White Paper and National Land Transport Plan*

The *AusLink White Paper: Building Our National Transport Future* (the White Paper) (Federal Government 2004) is the Federal Government's formal policy statement on land transport. It identifies seven national objectives for the AusLink investment program, promoting sustainable national and regional economic growth, development and connectivity. Table 3-1 lists the seven objectives and identifies how this project is consistent with them.

Table 3-1 Project consistency with the White Paper national objectives

Objective	Project consistency
Improved national and inter-regional connectivity for people, communities, regions and industry.	The project will contribute to achieving this objective by providing an efficient dual carriageway highway with easy-access links with the existing highway in and out of Holbrook, local roads and private properties.
Improved national, inter-regional and international logistics.	The project would contribute to improved logistics by providing road users with improved travel efficiency and driving conditions along the Hume Highway, thus facilitating the improved logistical delivery of goods and services nationally, inter-regionally and internationally.
Enhanced national, inter-regional and international trade.	The project would contribute to enhanced trade by providing road users with improved travel efficiency and driving conditions along the Hume Highway, thus facilitating the enhanced trade of goods and services nationally, inter-regionally and internationally.

Objective	Project consistency
Enhanced health, safety and security.	The project is expected to improve safety, along both the project and the existing highway through Holbrook. The project is expected to have a lower crash rate than the existing highway conditions due to the provision of a physical separation between the northbound and southbound carriageways. The project is expected to improve safety on the existing highway in Holbrook by removing some traffic, so reducing the conflict between local and through traffic.
Consistency with obligations to current and future generations to sustain the environment.	Environmental sustainability has been a key consideration in the development of the project. Impacts on areas of environmental significance have been avoided or minimised through route selection and design refinement (see Chapter 4). Where impacts are unavoidable, measures have been identified to mitigate and/or offset these impacts (see Chapters 9 and 10). Consistency of the project with the four principles of ecologically sustainable development (ESD) is addressed in Chapter 12.
Consistency with viable, long-term economic and social outcomes.	The project has the potential to have some adverse economic impacts on businesses in Holbrook (see Section 9.4). However, the long-term economic viability of Holbrook was a key consideration in the development of the mitigation and management measures identified, such that these impacts would be minimised as far as possible. While there may be some social implications associated with the adverse economic impacts, the project has the potential to increase the amenity of Holbrook, which may contribute to an improved long-term social environment for Holbrook.
An effective link to the broader transport network.	The project would contribute to achieving this objective by providing road users with improved travel efficiency and driving conditions along the Hume Highway, which facilitates effective links with the broader national transport network.

Under AusLink, the Federal Government established a *National Land Transport Plan* and a defined National Transport Network that includes the Hume Highway. The *National Land Transport Plan* outlines eight strategic directions. Table 3-2 lists those strategic directions applicable to this project and identifies how the project is consistent with them.

Table 3-2 Project consistency with relevant *National Land Transport Plan* strategic directions

Strategic direction	Project consistency
Improved capacity and performance of the vital eastern seaboard north–south interstate corridors through the upgrade of critical road links.	The project would improve the capacity and performance of the Hume Highway at Holbrook by upgrading the existing single carriageway through the town with a dual carriageway bypass. This would contribute to improving the capacity and performance of this critical north–south interstate road link.
Improved safety on the national network in line with the National Road Safety Strategy.	The project would be consistent with the National Road Safety Strategy as it is expected to improve safety, along both the proposed bypass and the existing highway through Holbrook. The project is expected to have a lower crash rate than the existing highway conditions due to the provision of a physical separation between the northbound and southbound dual carriageways. The project is expected to improve safety on the existing highway through Holbrook by removing some traffic, reducing the conflict between local and through traffic.

3.1.2 *AusLink Sydney–Melbourne Corridor Strategy*

The Sydney–Melbourne corridor is vital to the Australian economy. It is the busiest inter-capital road corridor, with approximately 40 per cent of long-distance road freight movements on the National Network using the Hume Highway for at least part of their journey. Interstate freight between Sydney and Melbourne is forecast to increase by nearly 70 per cent over the next 20 years. By 2025, it is expected that 5000 to 6000 heavy vehicles would be moving along the Hume Highway each day.

The short-term (to 2014-15) strategic priorities for the *AusLink Sydney-Melbourne Corridor Strategy* (Federal Government 2007) correspond to the priorities for the AusLink *National Land Transport Plan* and associated investment program.

The short-term priorities for the Sydney–Melbourne corridor centre on five strategic issues; Table 3-3 lists those priorities applicable to this project and identifies how the project is consistent with them.

Table 3-3 Project consistency with the short-term priorities of the Sydney–Melbourne Corridor Strategy

Short-term priority	Project consistency
Improved road safety, especially: ▪ Improved fatigue management, including provision of rest areas. ▪ Management of local access intersections with the Hume Highway (eg non grade-separated intersections).	Given the short length of the project (approximately 9.5 kilometres) and the environmental constraints, no rest areas are proposed. However, the project would provide easy access in and out of Holbrook to encourage fatigued drivers to off-load, rest and revive in the town. The project has been designed to minimise the number of direct, at-grade intersections of roads and property accesses.
Maintenance and rehabilitation of road pavements and bridges.	The project has been designed to ensure a pavement design life of up to 40 years. The construction techniques that would be applied to the pouring and setting of this pavement would maximise its design life and minimise the need for complex maintenance. The bridges have also been designed to maximise design life and minimise maintenance. Particularly, the drainage on the bridges has been designed to keep the travel lanes free from runoff, which would reduce the amount of water pooling on the bridges.

The completion of the project is critical to achieving the objectives of the AusLink program as they relate to the Sydney–Melbourne corridor.

3.1.3 NSW State Infrastructure Strategy

The *State Infrastructure Strategy — New South Wales 2008-09 to 2017-18* (the Strategy) (NSW Government 2008) provides strategic direction for planning and delivery of infrastructure in NSW. The project is consistent with the aims and objectives of the Strategy as:

- Projects identified for inland NSW include projects to complete the duplication of the Hume Highway (including the project).
- Investment priorities for transport identified in the Strategy include major improvements to the Hume Highway (including the project).

Related to the Strategy is the *State Plan 2006: a New Direction for NSW* (NSW Government 2006), which identifies the duplication of the Hume Highway at Holbrook by 2012 as a major road upgrade that would contribute to an effective transport system in NSW.

3.1.4 Hume Highway Strategic Planning Study

The *Hume Highway Strategic Planning Study Final Report* (the Strategic Planning Study) (Connell Wagner 2004) was undertaken to analyse the existing and future transport conditions on the Hume Highway.

In 2006, traffic volumes on the Hume Highway in the vicinity of the project (ie south of Holbrook at RTA count station 95.036) were 4900 vehicles per day (including around 40 per cent heavy vehicles). Traffic volumes increase along the Hume Highway between the Sturt Highway and Holbrook. Just south of the Sturt Highway junction (RTA count station 95.029), 2006 traffic volumes on the Hume Highway were 4360 vehicles per day (including around 45 per cent heavy vehicles). South of Tarcutta (RTA count station 95.423), volumes were slightly higher at 4470 vehicles per day (including around 45 per cent heavy vehicles). To the south of the project and north of Bowna (RTA count station 95.475) traffic volumes were higher again at 5120 vehicles per day (including around 40 per cent heavy vehicles).

Within the Holbrook town area, traffic volumes are in the order of 10500 vehicles per day (RTA count stations 95.583, 95.585 and 95.586).

Volumes on the highway in this area have risen significantly over the past 10 years at a rate of approximately three to four per cent per annum (linear). The gradual improvement in travel conditions brought about by completion of significant upgrades elsewhere on the highway and growth in heavy vehicle travel are considered to be contributing factors.

The Strategic Planning Study concluded that traffic volumes on the highway would continue to increase. South of the Sturt Highway, by 2021 they would reach a maximum of 9000 vehicles per day (including around 3600 or 40 per cent heavy vehicles). The Strategic Planning Study also concluded that, if the Hume Highway was upgraded to dual carriageway, its performance south of the Sturt Highway would be acceptable until 2021 and beyond.

In modelling freight demand for road and rail, the Strategic Planning Study concluded that future investment in rail would only marginally reduce the traffic volumes along the highway and would not offset the need to upgrade the Hume Highway to dual carriageway.

3.1.5 Summary of strategic justification

The strategic need for the project has been identified in the various national and state planning policies and provisions discussed above. In those sections, the strategic justification for the project has been confirmed by demonstrating the consistency of the project against the various objectives, strategic directions and priorities of the planning policies and provisions. The strategic objectives for the project listed below are consistent with those of the numerous national and state planning policies and provisions discussed:

- Increase infrastructure handling capacity and efficiency.
- Improve safety and security.
- Improve transport productivity on its nationally strategic and export-oriented freight corridors.
- Improve the reliability of travel on interstate and inter-regional corridors.

- Be consistent with viable and long-term economic and social outcomes, and with the obligation to current and future generations to sustain the environment.

3.2 Need for the project

3.2.1 Level of service

Level of service (LoS) is a fundamental performance measure used in the planning, design and operation of roads, providing the basis for determining the number of lanes to be provided in the road network. A LoS of A represents average speeds greater than 93 kilometres per hour, while a LoS of F represents average speeds less than 72 kilometres per hour (see Section 9.5 and *Technical Paper 4 — Traffic and transport* (Volume 2)). Acceptable performance is a LoS of D or better at greater than 80 kilometres per hour.

The existing dual carriageway sections of the Hume Highway are currently operating at a LoS of A, with significant capacity to accommodate traffic growth. The *Hume Highway Strategic Planning Study* (Connell Wagner June 2004) (refer Section 3.1.4) predicted that, if the Hume Highway in NSW is upgraded to complete dual carriageway, the performance of the highway south of the Sturt Highway would reach a maximum, acceptable LoS of C by 2021.

Assessment of the existing network performance of the Hume Highway at Holbrook identified that, during the weekday peak hour and the heavy vehicle peak period (around midnight), the LoS is B. When traffic volumes are heaviest (usually during long weekends and school holidays), the LoS reaches D. The number of times these conditions occur each year is low, but will increase as traffic volumes increase. By 2022 the conditions on the highway are forecast to slip into the unacceptable range (LoS E) during the highest traffic times of the year (eg long weekends and school holidays). Traffic under average conditions would remain within the acceptable range with a LoS of C.

The project would improve the network performance. By 2032, in the busiest time of the year, the project is expected to operate at a LoS of A, while the existing highway is predicted to operate at a LoS of D. Further discussion is provided in Section 9.5.4 of this report and Section 4.3.1 of *Technical Paper 4* (Volume 2).

3.2.2 Capacity, performance and efficiency

Section 3.1 has demonstrated the need to provide an interstate and inter-regional highway with improved capacity, performance and efficiency. Construction of the project would contribute to meeting this need for the Hume Highway. However, of importance for this project is the need to balance improved highway capacity, performance and efficiency with free-flowing, direct links into and out of Holbrook. This need was raised by the community during consultation activities for the project (see Chapter 7).

3.2.3 Safety

Crash data for the five years from 2002 to 2006, inclusive, indicates that the single carriageway section of the highway around Holbrook had a total of 35 reported crashes comprising one fatal (one person killed), 15 injuries (24 persons injured) and 19 tow-away crashes. The primary crash types were 'off-road' on straight (45.7 per cent) and 'rear-end' (17.1 per cent), with about half (48.6 per cent) of crashes occurring in the 100 kilometres per hour speed zone (ie out of town). Multi-vehicle crashes comprised 42.9 per cent of the total.

Crash rates are calculated by using vehicle kilometres travelled (VKT) to measure exposure to a crash event. One VKT is equivalent to one vehicle travelling a distance of one kilometre or alternatively, two vehicles travelling for a distance of half a kilometre. Crash rates are generally reported per 100 million vehicle kilometres travelled (100 MVKT). Table 3-4 compares the crash rate on the single carriageway section of the highway around Holbrook for the five years from 2002 to 2006 with divided carriageway sections of the highway between the Sturt and Olympic highways and typical two-lane rural main roads.

Table 3-4 Crash rate comparison

Location	Rate per 100 million vehicle kilometres travelled (MVKT)			
	Fatal	Injury	Tow-away	Total
Single carriageway section, Holbrook	1	12	15	28
Divided carriageway sections, Sturt Highway to Olympic Highway[1]	1.1	7.9	15.6	24.6
Typical two-lane rural main roads	1.4	14.2	17.2	32.8

Source: RTA (2008b)

Note: 1. Crash data between October 1997 and September 2002 from the *Hume Highway Strategic Planning Study Final Report* (Connell Wagner June 2004)

The crash rate comparison indicates that the highway around Holbrook experiences more crashes than the divided carriageway section of the Hume Highway, and fewer crashes than a typical two-lane rural main road. The injury crash rate is considerably higher on the highway at Holbrook than on the divided dual carriageway section, probably as a consequence of the high proportion of multi-vehicle crashes.

Predictions of the future crash rates with and without the project have been undertaken. They indicate that, based on recent crash data, the project would result in a 19 per cent reduction in crashes at Holbrook (see Section 9.5.4 of this report and Section 4.4 of *Technical Paper 4* (Volume 2)). This reduction in crashes is expected by:

- Reducing conflicts between local traffic and through traffic in the town.
- Providing improved clear zones and sealed shoulders on the project to reduce the incidence and impact of any run off-road crashes.
- Providing a central median on the project to reduce the incidence and impact of head-on crashes.
- Controlling access to and from the project.

Following completion of the project, the crash rate is expected to reduce and to be no more than 23.0 per 100 MVKT. This prediction is based on the experience of existing dual carriageway sections carrying similar traffic volumes on the Hume Highway south of the Sturt Highway (refer Section 4.4 of Technical Paper 4 (Volume 2)).

3.3 Project objectives

The primary objective of the project is to provide a dual carriageway bypass of Holbrook. The project-specific objectives and associated indicators listed below relate more directly to the local Holbrook area than the strategic objectives, while lending further support to the national and state policies and provisions discussed in Section 3.1. The project-specific objectives are described in Table 3-5.

Table 3-5 Project specific objectives and associated indicators

Objectives	Indicators
Improve safety and traffic and travel efficiency.	▪ Meet design codes (ie traffic lane widths, shoulder widths, grades). ▪ Provide consistent driving conditions (including posted speed limit). ▪ Reduce travel time. ▪ Improve performance of the road network (level of service).
Meet community needs for the long term.	▪ Facilitate free flowing direct links into and out of Holbrook. ▪ Remove some through traffic from the town. ▪ Provide efficient connection for local and regional traffic. ▪ Minimise property impacts. ▪ Provide safe access to private properties.
Minimise adverse impacts on the environmental values of the area.	▪ Minimise impacts on Aboriginal and non-Aboriginal heritage. ▪ Minimise visual impacts through the implementation of the urban design objectives adopted for the project. ▪ Minimise impacts on biodiversity.
Cost effective and affordable outcome.	▪ Provide a cost effective solution in terms of: ▸ Capital cost. ▸ Maintenance cost.