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# M1 Pacific Motorway extension to Raymond Terrace

Environmental impact statement –  
Chapter 26: Project justification  
and conclusion

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## 26. Project justification and conclusion

This chapter presents a justification of the project and a conclusion to the EIS. The justification considers how the project balances strategic and project needs against the protection of the environment and planning outcomes outlined in the objects of the *Environmental Planning and Assessment Act 1979* (EP&A Act), including Ecologically Sustainable Development (ESD) and community consultation.

**Table 26-1** outlines the SEARs relating to the project justification and conclusion.

Table 26-1 SEARs relating to project justification and conclusion

Secretary's requirement	Where addressed
1. Environmental Impact Assessment Process	
1. The Environmental Impact Statement (EIS) must be prepared in accordance with Part 3 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> (the Regulation).	<b>Section 26.2</b> addresses the requirements of Part 3 of Schedule 2 of the Regulation regarding the justification for the project, having regard to the principles of ecologically sustainable development.
2. Environmental Impact Statement	
1. The EIS must include, but not necessarily be limited to, the following: <ul style="list-style-type: none"> <li>(g) a description of how alternatives to and options within the project were analysed to inform the selection of the preferred alternative / option. The description must contain sufficient detail to enable an understanding of why the preferred alternative to, and option(s) within, the project were selected including:               <ul style="list-style-type: none"> <li>– details of the highway corridors and route options considered, and the criteria that was considered in the selection of the preferred route; and</li> <li>– a justification for the preferred proposal taking into consideration the objects of the <i>Environmental Planning and Assessment Act 1979</i> (EP&amp;A Act).</li> </ul> </li> </ul>	<p>Alternatives to the project and route options considered, including how the preferred route was selected are discussed in <b>Chapter 4</b>.</p> <p>A justification for the project against the objects of the EP&amp;A Act is provided in <b>Section 26.1.2</b>.</p>

### 26.1 Justification

#### 26.1.1 Project justification

The Pacific Highway and New England Highway between the M1 Pacific Motorway at Black Hill and Raymond Terrace, along with part of John Renshaw Drive, form part of the National Land Transport Network (NLTN). The project is located along this key freight route facilitating substantial interstate freight movements between NSW, Victoria and Queensland, and particularly the freight task between Sydney, the Hunter region, northern NSW and Queensland.

The project is in one of the most highly trafficked areas of the road network in the region and is more heavily congested than adjacent high standard sections of the M1 Pacific Motorway and Pacific Highway corridor. Key issues along the M1 Pacific Motorway, Pacific Highway and New England Highway corridors applicable to the project include:

- High traffic volumes on the New England and Pacific Highways, the M1 Pacific Motorway and John Renshaw Drive
- Lack of capacity and congestion on highly-trafficked routes

- Major delays, primarily between Beresfield, Tomago and Hexham, caused by intersection arrangements and merge/diverge locations
- Road safety
- Restrictions on heavy vehicle movements
- Accessibility for freight to major nearby existing and future employment areas
- Flood immunity of existing road corridors.

The project would help integrate the needs of the Hunter’s road network with those of the broader NLTN. By providing one of the last major upgrades required to complete a free flowing dual carriageway route between Sydney and Brisbane, the project would improve traffic efficiency and congestion caused by the interaction of high volumes of National, interstate, regional and local traffic on the currently constrained road network. The project would also promote connectivity between key residential and employment areas, improve road safety and improve flood immunity in this section of the road network. The project objectives are introduced in **Chapter 3**. A summary of how the project achieves the project objectives is provided in **Table 26-2**.

Table 26-2 Assessment of the project against the project objectives

Objectives	Assessment of the project against the objectives
<p>Improve travel time and road network efficiency for freight and commuters on the NLTN at the key strategic junction of the M1 Pacific Motorway, the New England Highway and Pacific Highway</p>	<p>The project would provide an alternative route to the existing road network, improving freight and commuter connectivity and allowing free movement for freight travelling along this section of the NLTN.</p> <p>Travel times would be substantially reduced between Newcastle, Raymond Terrace, Maitland and other regional industrial areas, improving network efficiency for commuting and freight. The project substantially reduces travel times for both the morning and evening peak periods in future years with travel time reductions of between 7-9 minutes in both peak periods along the M1 Pacific Motorway corridor upon opening of the project.</p>
<p>Provide improved long term route reliability along the M1 Pacific Motorway corridor, particularly in relation to congestion reduction, flood immunity and high demand holiday peak travel</p>	<p>The project would provide key infrastructure for movements along the eastern coast of Australia, improving travel time and travel time reliability between Brisbane in the north and Melbourne and Sydney.</p> <p>The project would provide a minimum 5% AEP flood immunity between Black Hill and Raymond Terrace (including 1% AEP local flood immunity between Black Hill and Tomago), improving from the current 20% AEP flood immunity on the existing network. The project would also provide a new flood emergency and evacuation access route (the project itself).</p> <p>The project would provide free-flow, dual carriageway conditions and avoid existing intersections along the M1 Pacific Motorway corridor to provide improved travel time reliability during high demand holiday periods through this part of the road network.</p>
<p>Improve road safety for all road users</p>	<p>The project would have a positive impact on road safety by:</p> <ul style="list-style-type: none"> <li>• Reducing congestion on the New England Highway and the Pacific Highway, which is expected to reduce rear-end and lane-change crashes</li> <li>• Reducing potential points of conflict between road vehicles on the network, minimising the risk of congestion-related incidents</li> <li>• Providing an improved road alignment, including wider lands and shoulders with barriers, minimising the risk and impact of any off-road crashes.</li> </ul>

Objectives	Assessment of the project against the objectives
Provide more efficient access to facilitate economic growth for the Lower Hunter and key regional employment areas such as the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill	<p>The project would improve travel times and connectivity to key activity centres in the region, including the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill.</p> <p>The project improves accessibility for oversize and overmass freight and enables end to end access by high productivity vehicles (PBS Class 2B heavy vehicles) along the M1 Pacific Motorway corridor across the Hunter River.</p> <p>The project would also improve access and connectivity to current and future employment and growth areas to and from the M1 Pacific Motorway.</p>

As detailed in **Table 26-2** the project achieves the project objectives and is considered appropriate and justified as the potential negative impacts are outweighed by the longer term positive impacts of the project. The project has sought to avoid and minimise environmental impacts through the options selection and design process and would continue to do so during detailed design. Where potential impacts could not be avoided, appropriate environmental management measures have been identified to manage these impacts. An extensive consultation program with community and government stakeholders has been carried out throughout project development, and would continue through EIS display, detailed design and construction to ensure that all stakeholder issues and concerns are understood, documented and addressed where feasible and practicable.

## 26.1.2 Objects of the EP&A Act

The objects of the EP&A Act provide a framework within which the justification of the project can be considered. Ecologically sustainable development principles have been considered throughout the project's development and are outlined in **Section 26.1.3**. A summary of this assessment is provided in **Table 26-3**.

Table 26-3 Assessment of the project against the objects of the EP&A Act

EP&A Act object	Comment
To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	<p>The project would promote the social and economic welfare of the community by improving road safety, reducing congestion along the local road network, and increasing connectivity of the local and greater road network to key future employment and growth areas.</p> <p>The project would also provide increased the flood immunity of the road network and provide a new flood emergency and evacuation access route (the project itself) in this location. The project has been designed to avoid impacts on natural and other resources and where impacts to natural and other resources are expected, the project has been designed to minimise impacts. Where impacts cannot be minimised through design, environmental management measures will be implemented.</p>
To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment	Ecologically sustainable development principles have been considered throughout the project's development and are outlined in <b>Section 26.1.3</b> .

EP&A Act object	Comment
To promote the orderly and economic use and development of land	<p>The project is one of the last major remaining upgrades required to complete a high standard dual carriageway connection between Sydney and Brisbane.</p> <p>The project supports current and future planned economic activity by improving regional and inter-regional connectivity, reducing travel times, and alleviating congestion along the local road network. The project would improve access and connectivity to current and future employment and growth areas to and from the M1 Pacific Motorway and Pacific Highway, including:</p> <ul style="list-style-type: none"> <li>• Future employment and population growth at Raymond Terrace, which is identified as a strategic centre within the Hunter</li> <li>• Growth and development of employment precincts at Tomago, Thornton, Beresfield and Black Hill.</li> </ul> <p>For freight, the project would provide an alternative route to the existing road network, improving freight connectivity and allowing free movement for freight travelling along this section of the NLTN. The project design would allow access for oversize and overmass vehicles to key employment areas in the region, including Tomago. The project also provides a bypass of the existing southbound Hexham Bridge, which is a major constraint to freight movements along the NLTN.</p>
To promote the delivery and maintenance of affordable housing	Not applicable to the project.
To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats	<p>A range of corridor options and design refinements have been considered for the project since planning began in 2004. As a result of this process, the environmental impacts of the project have been minimised, including impacts to ecological communities and native species and their habitats.</p> <p>While the project has been designed to avoid impacts on the natural and built environment, some impacts are still expected. A number of environmental management measures will be implemented to further minimise the direct and indirect ecological impacts of the project, including biodiversity offsets.</p>
To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	<p>Environmental impacts have been sought to be avoided or minimised through an extensive evaluation of the project. Community consultation particularly in relation to cultural heritage has provided a strong understanding of potential impacts through the project area. As a result of this process, the environmental impacts of the project have been minimised, including impacts to built and cultural heritage (including Aboriginal cultural heritage).</p> <p>The project design has adopted as narrow a footprint as possible in all areas to minimise impacts to Aboriginal heritage sites. The design has also placed the alignment as close as practicable to existing development and infrastructure to limit regional fragmentation impacts and to avoid impacts on less disturbed areas by consolidating the project corridor with existing development, utilities and road corridors. Management measures have been proposed to mitigate impacts to Aboriginal Heritage, such as an extensive salvage program, as outlined in <b>Chapter 12</b> (Aboriginal cultural heritage).</p> <p><b>Chapter 17</b> (non-Aboriginal heritage) outlines the management measures being proposed to address the impacts to non-Aboriginal heritage items.</p>

EP&A Act object	Comment
To promote good design and amenity of the built environment	<p>As outlined in <b>Chapter 15</b> (urban design, landscape and visual amenity), the design of the project has been guided by five urban design objectives to promote good design and amenity of the built environment:</p> <ol style="list-style-type: none"> <li>1. Provide a flowing road alignment that is responsive and integrated with the landscape</li> <li>2. Provide a landscaped Motorway that integrates with the adjoining natural setting</li> <li>3. Provide an enjoyable, interesting motorway</li> <li>4. Value the communities and towns along the road</li> <li>5. Provide a simplified and unobtrusive road design.</li> </ol> <p>An urban design and landscape strategy has also been developed for the project (refer to <b>Chapter 15</b> (urban design, landscape and visual amenity)). The strategy has been used to ensure the project fits into the surrounding area, supports local connections and contributes to communities and their natural, built and community setting.</p>
To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants	Not applicable to the project.
To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State	Consultation was carried out with the relevant local councils, State and Commonwealth government agencies in preparation of this environmental impact statement. Consultation carried out to date is discussed in <b>Chapter 6</b> .
To provide increased opportunity for community participation in environmental planning and assessment	The project development process has involved extensive, ongoing consultation with relevant stakeholders and the community since planning began in 2004. Consultation carried out for the project, as well as future consultation to be carried out, is discussed in <b>Chapter 6</b> .

### 26.1.3 Ecologically Sustainable Development

Development that improves the total quality of life, both now and in the future, is known as ESD. These principles improve quality of life in a way that maintains the ecological processes on which life depends and have been an integral consideration throughout the development of the project.

ESD requires the effective integration of economic and environmental considerations in decision-making processes. The four main principles supporting the achievement of ESD are discussed below.

#### ***Precautionary principle***

The precautionary principle deals with reconciling scientific uncertainty about environmental impacts with certainty in decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

The precautionary principle has been applied to the project since project inception in 2004. Extensive route options development and stakeholder consultation (refer to **Chapter 4** and **Chapter 6**) has been carried out for the project to avoid or otherwise minimise the environmental impacts of the project. The initial planning for the project saw alternate routes and options not progressing due to potential risks or environmental impacts which would not support the principles of ESD, to avoid impacts to items such as high value biodiversity areas (including wetlands).



The precautionary principle continued to guide the impact assessment and the development of environmental management measures (refer to **Chapter 24** (summary of environmental management measures)). The environmental assessment was prepared using a conservative approach, including an assessment of worst-case scenarios and modelling of the potential impacts of the project to ensure the proposed environmental management measures would effectively manage these impacts. The assessment has been carried out using the best available technical information and has adopted best practice environmental standards and measures to minimise the potential environmental risks of the project. The environmental assessment was carried out in collaboration with key stakeholders and relevant statutory and agency requirements.

This EIS has identified the environmental risks associated with the project and has proposed environmental management measures to avoid or mitigate these risks. Implementation of the identified measures would result in acceptable residual risks and no significant risk of serious or irreversible environmental harm.

***Inter-generational equity***

Inter-generational equity is concerned with the distribution of economic, social and environmental costs and benefits. Inter-generational equity introduces a temporal element with a focus on minimising the distribution of costs to future generations.

For road projects, the environmental impacts most relevant to inter-generational equity are biodiversity, water quality, socio-economic, air quality, waste, sustainability and climate change, and cumulative impacts. These are discussed further in **Table 26-4**.

Table 26-4 Inter-generational equity considerations of the project

Aspect	Comment
Biodiversity	<p>Impacts to biodiversity have been avoided and reduced through design refinements as far as practicable. However, the project would still impact biodiversity values, including clearing of native vegetation, habitat removal and fragmentation, and removal of threatened flora.</p> <p>Where impacts to biodiversity could not be avoided, a range of environmental management measures have been proposed to control these impacts. This has included the development of a Biodiversity Offset Strategy, which would be implemented in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH 2014b) to offset the vegetation and habitat removal impacts of the project.</p>
Water quality	<p>An assessment of potential impacts to water quality, including groundwater that would be intercepted by project activities, has been carried out for the project. Where potential impacts to water quality have been identified, management measures have been developed to control these impacts. Following the implementation of the proposed management measures, the project is expected to have minor to negligible impacts on existing water quality. Where any minor impacts occur, they are likely to be either highly localised, temporary and/or readily assimilated into the existing waterway.</p>

Aspect	Comment
Socio-economic	<p>The project has been designed with future road traffic needs in mind, taking into consideration future employment and population growth in the region. Once operational, the project would enhance travel times and travel reliability for motorists.</p> <p>Improved access and connectivity provided by the project would support future growth and development of these areas and the wider region. The project would also enable access by high productivity vehicles along the M1 Pacific Motorway and Pacific Highway between Sydney and Brisbane, supporting increased productivity benefits for freight operators.</p> <p>The project would involve diverting traffic from the existing New England Highway and Pacific Highway to travel along the new M1 Pacific Motorway, bypassing Heatherbrae and parts of Beresfield. A reduction in through traffic at Heatherbrae and Beresfield, particularly heavy vehicles, would help to enhance business amenity and improve local business access. Without the bypass, traffic levels in Beresfield and Heatherbrae would continue to increase, impacting on business amenity and customer access. This may reduce the attractiveness of these locations for some customers, particularly in Heatherbrae which has a higher proportion of retail businesses that service customers from surrounding areas. Additionally, the project has provided multiple interchanges to provide opportunity to enter and exit the M1 Pacific Motorway to access these existing businesses.</p>
Air quality	<p>The project will provide free-flow conditions along the main alignment, and the reduction of through motorists from the existing Pacific Highway and most local roads. The assessment of potential air quality impacts for the project has identified that the project would result in reductions in pollutant concentrations along the existing Pacific Highway. Estimated concentrations of CO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and other key air toxics due to the operation of the project were found to be well below the relevant NSW EPA air quality impact assessment criteria. The project would not result in changes to air quality at local or regional scales that would cause exceedances of air quality criteria at sensitive receivers.</p>
Waste and climate change	<p>Waste generation associated with the project would be short-term (mostly limited to the construction phase) and is not of a scale that is likely to affect the access of current and future generations to resources or waste disposal sites.</p> <p>Sources of greenhouse gas emissions during the construction and operation of the project are negligible</p>
Cumulative impacts	<p>Potential cumulative impacts of the project during construction and operation have been assessed. The assessment identified there is potential for short-term minor cumulative impacts if other projects in the vicinity are under construction at the same time, however, with the exception of Aboriginal heritage in certain sections of the project, these impacts are unlikely to be substantial.</p> <p>The project is expected to have cumulative long-term positive impacts with the Hexham Straight project once both projects are operational.</p>

### ***Conservation of biological diversity and ecological integrity***

Conservation of biological diversity and ecological integrity has been a fundamental consideration of the project design development and environmental assessment. As outlined in **Chapter 4**, the project design has been refined several times in order to avoid unnecessary impacts to biodiversity values, including wetlands to the north and south of the Hunter River. These refinements have included:

- Minimising direct impacts to wetlands west of Woodlands Close
- Avoiding and minimising impacts to floodplain wetlands and associated biodiversity with a viaduct across the Hunter River floodplain instead of an embankment
- Minimising fragmentation of habitat, including koala habitat, by aligning the project closely to existing infrastructure and land use
- Avoiding impacts to remnant vegetation, potential habitat for threatened species, connectivity impacts and a population of *Grevillea parviflora* subsp. *parviflora* with the removal of the link road at Tomago.

A biodiversity assessment has been carried out for the project and is provided in **Chapter 9** (biodiversity). This assessment identifies the potential impacts of the project on biodiversity and, where impacts could not be entirely avoided, provides environmental management measures to mitigate these impacts. This has included the development of a Biodiversity Offset Strategy, which would be implemented in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH 2014b) to offset the vegetation and habitat removal impacts of the project (refer to **Appendix I**).

### ***Improved valuation and pricing of environmental resources***

The principle of internalising environmental costs into decision making requires consideration of all environmental resources which may be affected by the carrying out of a project, including air, water, land and living things. Environmental factors should be included in the valuation of assets and services, such as:

- Polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement
- The users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste
- Environmental goals, having been established, should be pursued in the most cost-effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

This EIS has examined the environmental impacts of the project and identified appropriate environmental management measures for environmental resources which have the potential to be adversely impacted, including the identification of biodiversity offsets. Management measures to minimise resource use, pollution, waste generation and waste disposal requirements have also been identified. Requirements imposed from implementing these measures would result in an economic cost to Transport and, consequently, appropriate valuation has been given to environmental resources.

## **26.2 Conclusion**

The existing NLTN (M1 Pacific Motorway corridor), between Black Hill to Raymond Terrace is a combination of John Renshaw Drive, the New England Highway and the Pacific Highway. Generally it provides two lanes in both directions with six controlled intersections and speed limits ranging from 60km/h to 90km/h. Construction of the project would address the increasing congestion and travel times along the Pacific and New England Highways, delays at intersections and merge points, and the delays experienced during holiday peak travel times. The project would also improve flood immunity to a minimum 5% AEP flood immunity to travel lanes and a motorway standard road that would reduce crash rates along the M1 Pacific Motorway, New England Highway and the Pacific Highway.

The project would complete one of the last remaining major upgrades required to facilitate significant interstate freight movements between NSW, Victoria and Queensland. Additionally, the project would support freight servicing the Hunter Valley mining industry, the Port of Newcastle, and interstate movements, resulting in local, regional and national economic benefits.

The project is in accordance with a number of key strategic planning and policy documents including but not limited to NSW State Infrastructure Strategy 2018-2038 (Infrastructure NSW 2018), Future Transport Strategy 2056 (Transport for NSW 2018a), and NSW Freight and Ports Plan 2018-2038 (Transport for NSW 2018b).

The preferred option and concept design for the project was identified and refined through an extensive assessment and review process which started in 2004. The preferred option and concept design best meets the project objectives, has been thoroughly evaluated against the key performance criteria of function, environment and socio-economic considerations and ultimately provides value for money.

Key environmental issues have been examined throughout the design development process. Consultation has been carried out with affected community and stakeholders to identify impacts at an early stage, and where possible, avoid, minimise or identify appropriate management measures to be adopted. This has resulted in a number of design changes that have mitigated many of the potential impacts.

The EIS has assessed the potential environmental impacts and identified that the project will impact on a range of nearby receivers, including property and business owners, and the natural environment. Although many potential impacts have been avoided or minimised through design and project development, some residual impacts are still applicable. The key impacts caused by the project include biodiversity, noise and flooding, however, a range of mitigation measures will be implemented to manage these and many other environmental impacts and ensure that the project complies with relevant policy and guidelines.

The project is considered appropriate, justified and in the public interest as the negative impacts are outweighed by the long-term benefits of improved road safety, travel times and overall road network benefits for all road users and realising the completion of this motorway section of the NLTN.