


An aerial photograph of a highway interchange, overlaid with a large, semi-transparent olive-green filter. A large, white, stylized letter 'E' is positioned on the right side of the image, partially overlapping the highway. The text 'Part' is centered horizontally and partially overlaps the 'E'.

Part

E

A horizontal bar with a dark olive-green background and several small, colored rectangular segments in shades of teal and blue.

Justification  
and  
conclusion



# 2 Justification and conclusion

**This chapter provides a discussion on the justification for the Proposal in relation to biophysical, social and economic impacts, principles of ecologically sustainable development, the suitability of the highway corridor and the public interest.**

## 22.1 Justification

### 22.1.1 Biophysical, social and economic considerations

#### Biophysical

The consideration of impacts on the biophysical environment has been fundamental to the route selection and project design process. Identified impacts have been avoided and mitigated where possible through the development process. Nonetheless, a total of approximately 83 hectares of vegetation would be removed as part of the Proposal, of which approximately 18 hectares is part of endangered ecological communities listed under the *Threatened Species Conservation Act 1995*. Proposed initiatives directed at offsetting the residual impacts on biodiversity are proposed and would be considered in consultation with the Department of Environment and Climate Change.

Throughout this environmental assessment, mitigation and management measures have been identified to ensure the potential impacts of the Proposal are managed appropriately. These mitigation measures are presented as a draft Statement of Commitments (refer Appendix A) and demonstrate the NSW Roads and Traffic Authority's (RTA) commitment to reducing and / or ameliorating any potential impacts. An environmental management plan would be developed and implemented in the construction and operation phase of the proposed project to ensure the achievement of all environmental management and mitigation measures.

#### Social and economic

The existing Pacific Highway is already a dominant feature in the study area. The Proposal would represent an incremental change from the current arrangements south of Woolgoolga and would generally have a minor impact on the social environment (including benefits for Woolgoolga). The implications for the rural communities traversed by the bypass section are more pronounced, which is inherent with significant deviations (bypass section) of the highway away from its existing alignment. Management measures have been put in place to mitigate these adverse impacts.

The design of the Proposal has aimed to reduce potential negative social impacts; including improving road safety, reducing travel times and enhancing amenity and tourist opportunities in the area while minimising the extent of property acquisition. The Proposal would have the following social and economic impacts:

- Improved road safety that includes safer access points to and from the highway and provision of a separate local access road network to minimise conflicts between local and through traffic.
- Improved highway capacity resulting in less congestion particularly during the school holiday period.
- Improved traffic and freight movement efficiency.
- The Proposal would have a benefit to cost ratio in the order of two, which meets the RTA's Pacific Highway objective of a benefit to cost ratio of two (refer Chapter 10 of this report).

The Proposal would have an overall positive effect on the long-term noise environment for residents. The noise assessment (refer Chapter 11) has identified that the Proposal inclusive of noise management measures would result in approximately 70 per cent of residences on the western side of the upgrade section, 84 per cent of residences on the eastern side of the upgrade section and 100 per cent of residents adjacent to the existing highway in the Woolgoolga area, experiencing a reduction in noise levels.

However, those residences near the bypass section have little or no existing exposure to road traffic noise. It is anticipated that road traffic noise levels ten years after opening are predicted to increase substantially at those residences. Inclusive of the proposed noise mitigation and management measures, noise levels at all residences near the bypass section are predicted to be within the *Environmental Criteria for Road Traffic Noise* levels for new roads.

No major issues were identified with respect to agriculture, Sikh culture, land use or visual impacts during the preparation of the environmental assessment and various mitigation measures have been proposed in relation to the issues arising – as detailed in Chapters 9, 14, 15, 16 and 19. Issues relating to Aboriginal heritage (Chapter 12) have been identified (and where possible, amendments to the design have ensured minimal impact to avoidance of highly significant sites) and continue to be addressed through ongoing consultation and investigation.

### **22.1.2 Ecologically sustainable development**

Ecologically sustainable development is the use, conservation and enhancement of community resources so that ecological processes, and hence the quality of life, are sustained and improved for present and future generations. It is based on four principles:

- The precautionary principle.
- Intra and inter-generational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation and pricing of environmental resources.

The principles of ecologically sustainable development have been an integral consideration throughout the process of developing the Proposal and assessing its benefits and effects. In addition, the preparation and exhibition of the environmental assessment makes detailed information about the Proposal and the subsequent proposals available to inform public discussion. This assists the development of the Proposal in accordance with ecologically sustainable development principles and public and government agency response is considered in the decision on whether the Proposal should proceed.

**Precautionary principle**

The precautionary principle deals with certainty in decision making. It requires that planning for the Proposal adopts best practice environmental assessment techniques, and the Proposal adopts best practice environmental goals, standards and measures to minimise the risks associated with the potential environmental impacts. The key principles and priority of avoidance, minimisation, mitigation and management have been adopted when presented with any uncertainty or with particularly sensitive environmental issues and are embodied in the draft Statement of Commitments.

The environmental assessment has been prepared for the RTA by environmental assessment specialists and has relied on the best available technical information. This has been coupled with the adoption of best practice environmental standards, goals and measures in development mitigation measures to minimise the risks associated with potential environmental impacts.

More specifically the precautionary principle is implicit in the following areas:

- Identifying constraints and avoiding where possible.
- Requiring adherence to best practice construction management techniques including reference to adopted guidelines and policies in the Statement of Commitments.
- Proposing ongoing monitoring through the construction phase and also during operation.
- Identifying particular safeguards and monitoring requirements for sensitive areas including the Solitary Island Marine Park.
- Ensuring a precautionary approach to the noise assessment including sensitivity analysis.
- Identifying a range of other measures to avoid, limit or reduce adverse impacts on biodiversity, heritage, flooding and water quality.
- Proposing offset measures to address permanent impacts.
- Ensuring community concerns have been considered and addressed in the environmental assessment.

**Intra and inter-generational equity**

This principle requires the present generation to ensure that the diversity, health and productivity of the environment is maintained or enhanced both within existing generations and also for future generations.

Equity within the current generation (intra-generational equity) requires that the economic and social benefits of the proposed development are distributed appropriately among all members of the community at local, regional, state and national levels. It is also necessary that environmental safeguards against degradation to local and regional accessibility, cultural heritage, visual, acoustic and air quality are implemented equitably. The potential adverse impacts on environmental resources likely to affect social equity have been assessed and mitigation measures included in the Proposal.

In terms of inter-generational equity, the Proposal is primarily a plan that anticipates the future road traffic needs of the area as this has been influenced through strategic land use decisions by Coffs Harbour City Council and the Department of Planning. Without it, both current and future generations would be exposed to higher traffic congestion, a reduction in road safety and reduced accessibility and associated social and environmental impacts. The road user benefit cost ratio of two also ensures that every dollar spent today would provide a higher economic benefit to future generations.

A potentially significant issue emerging in terms of inter-generational equity is the impact of climate change from greenhouse emissions. The main sources of greenhouse gases from construction of the Proposal would be those released from the production of material, the transport of material to the site, fuel consumption associated with construction machinery and from removal of vegetation. Available management and mitigation measures to offset construction related greenhouse gases are limited. Minimum requirements would be to optimise fuel economy of all construction machinery including regular servicing. To further reduce greenhouse emissions, the construction contractor would be required to use green energy for at least 50 per cent of its on-site electrical energy requirements and investigate the feasibility of using biofuels in construction equipment. During operation, the impact on greenhouse emissions is expected to be less than if the Proposal was not constructed.

The implementation of monitoring measures to review and respond to any potential longer term adverse impacts on biodiversity, water quality and other sensitive environmental issues would also ensure that the principle of inter-generational equity is met, while also addressing the requirements of the precautionary principle.

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

The principle of conservation of biological diversity and ecological integrity has had detailed consideration in the environmental assessment process. Both the selection of the preferred route and the design of the Proposal have attempted to avoid or minimise impacts on native vegetation. Nevertheless, the Proposal would result in the removal of approximately 83 hectares of native vegetation. To address the residual impacts of the Proposal, the Proposal includes the provision of dedicated and combined fauna crossings, including glider crossings and the provision of fauna exclusion fencing at key locations. The RTA would develop a compensatory habitat agreement prior to construction in consultation with the Department of Environment and Climate Change to offset identified impacts to key habitats such as endangered ecological communities.

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

The principle of improved valuation and pricing requires that the economic value of environmental resources be considered in decision making.

Values placed on environmental resources potentially affected by the Proposal were established through the extensive studies and agency and community consultation undertaken since the inception of the Proposal. Those values were critical factors in route selection and concept design. The values placed on environmental resources by the RTA, its contractors, agencies and the community was reflected in decisions on option selection and concept design, aimed at avoiding or minimising potential impacts; and subsequently at mitigating remaining unavoidable impacts.

The extent of avoidance of impacts upon important environmental and social attributes and the application of extensive mitigation and management measures reflects a significant consideration of the value of the environmental resources in a non-monetary sense.

### **22.1.3 Suitability of the corridor**

The route for the Sapphire to Woolgoolga upgrade on balance was concluded to be the most suitable route considering a wide range of community, environmental and engineering issues. Numerous options were assessed during the route selection phase which culminated with the preferred route announcement in December 2004. Documentation supporting the selection of the preferred route, including the *Preferred Route Option Report* was made publicly available following the announcement of the preferred route. Details on the rationale for the preferred route selection are presented in Chapter 6 of this report and information on the subsequent refinements to the

route made during the concept design and environmental assessment phase are presented in Chapter 7.

### **22.1.4 Public interest**

The Proposal has been developed as part of the Pacific Highway Upgrade Program. This is an essential program aimed at improving the standard of the overall highway, eliminating accident 'blackspots' and cutting overall journey times for the benefit of interstate and intrastate motorists, as well as for residents on the east coast of NSW. Improvements to the Pacific Highway would support the population and economic growth projected for the Mid North Coast region by providing high quality road infrastructure with direct access to employment, education, health, commercial services and retail and recreational facilities as well as tourist destinations in the region.

Although there would be localised impacts for numerous property owners and some business operators, the Proposal would provide improved level of service, reduction in crash rates, separation of local and through traffic and a more efficient travel between Sapphire and Woolgoolga. These outcomes would be of substantial benefit for both inter-regional travellers and for local communities in the study area.

### **22.1.5 Achievement of project objectives**

The Proposal can be justified insofar as it fulfils the project and Pacific Highway Upgrade Program objectives (refer Chapter 3) by:

- Reducing road accidents from 29 crashes per 100 million vehicle kilometres travelled to 20 crashes per 100 million vehicle kilometres travelled.
- Reducing travel times (eg. between Sapphire and Arrawarra Beach Road in 2011 from 18 minutes to 13.3 minutes and in 2031 from 22.6 minutes to 13.3 minutes). The design of the Proposal would allow a signposting speed of up to 110km/h.
- Introducing a high standard design, improved travel times and "flat" grading that reduces freight transport costs. Further, the Proposal has been designed for heavy vehicle use and a combined heavy and light vehicle rest area is proposed at the Arrawarra interchange.
- Involving the community and considering their interests. There has been extensive consultation with the community since the beginning of the options development phase and this will continue through to and including submissions that will be considered as a result of exhibition of this report. Community focus groups have been developed and members have provided input which has been taken into account when developing the design for the Proposal.
- Planning and designing the Proposal to provide a route that supports economic development. It is consistent with future urban development along the Pacific Highway, with interchanges strategically located to provide safe and efficient access to existing urban centres and planned developments in the study area.
- Undertaking an extensive and robust route selection and concept design process to ensure management of the Proposal in accordance with ecologically sustainable development principles. Further, best environmental practice has been incorporated into the design and mitigation measures (refer Appendix A).
- Providing value for money considering both road user economic analysis and qualitative assessment of overall public benefit inclusive of environmental costs and benefits.

No action or deferral of the Proposal would result in an unacceptable decline of safety conditions and deteriorating community amenity along the existing highway between Sapphire and Arrawarra. Predicted traffic growth would further exacerbate problems currently experienced with the existing road and traffic environment.

Without major upgrading of the Pacific Highway between Sapphire and Arrawarra, the predicted traffic growth would increasingly expose the deficiencies of the existing road environment over the forecast period. Specific consequences would include:

- Continuing and increasing high numbers of traffic accidents.
- Continuing and increasing delays to both local and through traffic, especially during peak periods.
- Continuing and increasing conflict between local and through traffic through the study area.
- The deterioration of traffic conditions to unacceptable levels particularly at holiday times.
- An inconsistency in road standard between the section of highway within the study area and the remainder of the upgraded Pacific Highway.
- Worsening road and traffic conditions with consequent adverse environmental effects such as noise, vibration and community disruption.
- Increased limitations for pedestrian access and risk of pedestrian accidents due to traffic growth.
- Exacerbation of community severance as the standard of access to and from the highway deteriorates.
- Failure to achieve the objectives of planning and transport strategies, in particular the Pacific Highway Upgrade Program and the Coffs Harbour Highway Planning Strategy.
- Probable constraints to planned urban developments in the study area due to access limitations.

## 22.2 Conclusion

This environmental assessment has addressed the key issues identified in the environmental assessment requirements under Part 3A of the *Environmental Planning and Assessment Act*. A checklist of these requirements and where they are addressed in this report, is provided in Appendix B.

The Proposal fulfils the objectives of both the Project and the Pacific Highway Upgrade Program (refer Chapter 3). It would also meet the State Government planning objectives contained in the *Draft Mid North Coast Regional Planning Strategy 2006-31*, particularly in terms of responding to significant economic and population growth expectations for the north coast of NSW.

In meeting the above objectives, the Proposal is expected to have significant functional, environmental, social and economic benefits on a local, regional and national scale. The most notable benefits would be:

- Improvements to road safety conditions for all road users in the study area attributed to the high standard design that is based on dual carriageways with controlled access conditions (viz. highway access limited to defined interchanges) and the related separation of local and through traffic.
- Improved travel times and transport efficiency for local road users as well as inter-regional vehicles, the latter including freight transport along the NSW coast between regional and capital centres.
- Increased traffic capacity and level of service along the route that reduces congestion effects and especially during peak holiday periods (which currently have severe impacts on tourist destinations like the Coffs Harbour and northern beaches area).
- Compatibility with existing and planned urban development in the study area mainly through provision of interchanges at strategic locations and inclusion of a local access road network, both of which correspond to established land use development plans.
- Significantly improved accessibility between local communities along the northern beaches between Sapphire and Arrawarra including cross highway mobility (due to the proposed local access road network), resulting in improved use of community facilities and services and increased social cohesion.



- Improved noise environment for most residences along the upgrade section and for residences adjacent to the existing highway through Woolgoolga.
- Removal of through traffic from Woolgoolga resulting in generally improved amenity of the town (e.g. traffic noise, traffic conflict, visual) and enhanced community linkages between the large population areas east and west of the current highway.
- Opportunities for enhanced local business activity and growth in the Woolgoolga town area associated with the above benefits arising from removal of through traffic.
- Significant local and regional economic benefits are expected to flow to the Coffs Harbour area and particularly in the important tourism sector, noting that private car use will remain by far the dominant travel mode for visitors.
- Good road user economic outcomes with benefits clearly in excess of costs and indicating a sound expenditure by governments on this transport infrastructure.
- Positive long term noise impacts, water quality improvements in the long term and a net reduction in greenhouse gas emissions by 2025.

However, as with any major highway proposal there are inevitably adverse impacts that would occur during the construction and or operational phases on the Proposal. The major adverse impacts are related primarily to:

- Property acquisition that would affect a total 127 lots, most notably with significant effects on rural properties in the bypass section.
- Landscape and visual changes and especially in the bypass section which traverses mainly rural lands of high visual quality.
- The clearing of 83 hectares of native vegetation including 18 hectares of important habitat (i.e. endangered ecological communities).
- Highway traffic noise would be introduced along the bypass section of the route which is currently a predominantly rural / agricultural area with low background noise levels.
- Loss of 127 hectares of a combination of banana land and other productive agricultural land, with severe to critical implications for nine banana farms.

Mindful of the nature and magnitude of these effects and the inability to avoid or eliminate the identified impacts through further planning and design, substantial effort has focussed on the development of comprehensive environmental management and mitigation measures. These measures aim to minimise, as far as practical, the identified impacts and represent best practice environmental management for large infrastructure development. As the largest capital works organisation in NSW, the RTA has a very substantial track record in successfully devising and implementing environmental management plans for highway projects, often in very sensitive locations. The measures for the Sapphire to Woolgoolga upgrade have been incorporated formally into the Proposal by the RTA in the form of a draft Statement of Commitments (refer Appendix A), noting that these commitments have been updated, strengthened and tailored from the preliminary commitments initially presented in the project application report in November 2006.

There are numerous other relatively minor adverse impacts or potential impacts that could eventuate as a consequence of the Proposal. These relate to matters such as construction noise and vibration, construction air quality, construction traffic disruption, effects on water quality, land use planning, non-farm business effects, Solitary Islands Marine Park, forestry operations, Aboriginal heritage sites, non-Aboriginal heritage sites, air quality and soil loss. The assessment has concluded that these environmental impacts are of a low risk because the risk has been largely avoided through planning, the small scale of impact and / or the capacity for the risk to be readily managed. Nonetheless, the draft Statement of Commitments includes measures to be applied during construction and or operation of the Proposal to ensure these aspects are also effectively managed.

As noted above, the development of the project which commenced in 2001 has sought to optimise the functional performance of the future highway through the study area and to identify and incorporate opportunities that maximise community benefit. Concurrent with this, much attention has been given to identifying and valuing the environmental resources of the study area; and avoiding or minimising the potential adverse environmental impacts of the Proposal. These broad aims have been a major focus from the early option identification phase, through the option evaluation and preferred route selection and into the concept design and environmental assessment. Overlaid on this has been the development of comprehensive environmental management and mitigation measures to address remaining unavoidable adverse effects. The acceptable environmental outcomes that would be achieved from this approach, coupled with the RTA's commitment to further examine opportunities for offsetting any residual impacts (in consultation with relevant government agencies), means that there would be net benefits to the community and environment. As such, it is concluded that the Proposal has a strong and clear justification.