

An aerial photograph of a multi-lane highway cutting through a suburban landscape. The highway runs diagonally from the bottom left towards the top right. On the left side of the highway, there are several large green fields, some with small ponds, and scattered houses. On the right side, there is a residential neighborhood with many houses and trees. In the top right corner, a beach and the ocean are visible. A decorative horizontal bar with alternating dark grey and light blue segments is positioned across the middle of the image, partially overlapping the highway. The text 'Executive Summary' is centered over the highway in a large, blue, sans-serif font.

# Executive Summary



# Executive Summary

**The Sapphire to Woolgoolga Pacific Highway upgrade project (the 'Proposal') is an important component of the Pacific Highway Upgrade Program. The Program is jointly funded by the New South Wales and Australian governments, upgrading the Pacific Highway from Hexham to the Queensland border. The Proposal commences approximately eight kilometres north of Coffs Harbour at Sapphire and extends for approximately 25 kilometres to the vicinity of Arrawarra Beach Road north of Woolgoolga.**

The Coffs Harbour Highway Planning Strategy (the 'Strategy') was developed to address the need to upgrade the Pacific Highway between Sapphire and Woolgoolga while planning for future traffic needs within the Coffs Harbour urban area. The Strategy is divided into two sections:

- The southern section from south Coffs Harbour to Sapphire (Coffs Harbour section).
- The northern section from Sapphire to Woolgoolga (this Proposal).

A key milestone in the development of the Strategy was reached in December 2004 with an announcement that the Coastal Corridor had been selected as the preferred route for the Strategy. The preferred route for this Proposal is an upgrade of the existing highway from Sapphire to south Woolgoolga and a bypass around Woolgoolga to Arrawarra, where it rejoins the existing highway.

## Need for the Proposal

The Pacific Highway is part of the Sydney-Brisbane AusLink National Road Network, and is a major route for tourism, business travel and freight movement. This section of the Pacific Highway also serves as a vital local transport link for the northern beaches area of Coffs Harbour. It has experienced substantial growth in traffic and has an unsatisfactory road safety record. There is existing and growing congestion and conflict between through traffic and local traffic accessing the rapidly developing northern beach suburbs, particularly during holiday and daily peak periods.

This section of the Pacific Highway is currently a two-lane single carriageway road, with overtaking opportunities approximately every five kilometres. The highway intersects with numerous local roads that service coastal and rural residential communities as well as multiple direct property access points. Many of these junctions have poor sight lines, inadequate merging / diverging arrangements and a high accident rate.

The Department of Planning's *Draft Mid North Coast Regional Strategy 2006-31* identifies a potential population growth of over 90,000 people by 2031, with the Coffs Harbour area identified as having the highest growth. This section of the highway traverses an area of Coffs Harbour where approved plans for substantial urban development are already in place. The expected increase in population will correspond with an increase in residential and commercial development and result in additional local traffic demand, particularly on the Pacific Highway.

Without major upgrading along this section of the highway, the predicted increase in local and through traffic would see traffic conditions deteriorate to unacceptable levels, including a substantial increase in vehicle accidents and travel times. The deterioration of road and traffic conditions would cause a significant deterioration to local amenity.

## Route selection

As part of the Coffs Harbour Highway Planning Strategy, constraints analysis and detailed environmental, social and economic investigations were undertaken to identify a preferred route for the proposed highway upgrade.

From Sapphire to Moonee, the constraints relating to land use and steep terrain to the west of the highway resulted in the only feasible upgrade option being duplication of the existing highway. The option development task in this section was therefore based mainly on preparation of urban and engineering design concepts. This required a particular focus on the examination of access arrangements and alternatives within a highly constrained corridor.

From Moonee to Woolgoolga, a more expansive process of option identification was possible, with four separate corridors developed. This involved the integration of the concept designs with more detailed constraints analysis arising from the diverse site investigations of relevant socio-economic and biophysical factors as well as community feedback. The findings from these investigations were presented in the working papers accompanying the *Route Options Development Report* released in December 2002. In response to a request from Coffs Harbour City Council, two additional route options between Moonee and Woolgoolga were developed and evaluated prior to announcement of the preferred route in December 2004.

The preferred route (the Proposal) comprising duplication of the existing highway from Sapphire to south Woolgoolga and the Option E bypass of Woolgoolga was selected because it would:

- Most effectively meet the objectives of the Pacific Highway Upgrade Program including substantial road safety improvements and travel time savings for both through and local traffic.
- Have good functional performance while providing opportunities to separate through and local traffic.
- Provide acceptable value for money.
- Have good construction staging opportunities that could be provided within funding program limitations.
- Have relatively minor biophysical and heritage impacts compared to other broad corridors and at a level that can be effectively managed.
- Could be designed to minimise severance of existing or future communities.
- Provide limited but acceptable physical separation from existing and proposed residential areas so that with sensitive design, acceptable visual and traffic noise control measures could be achieved.
- Provide necessary road infrastructure for planned urban growth in the project area without compromising flexibility for future land use planning decisions.
- Provide opportunities to reduce social and community impacts through good urban design, the incorporation of mitigation measures and modifications to adjacent existing and proposed land use controls to encourage compatible development.

In May 2006, the NSW Roads and Traffic Authority (RTA) extended the Proposal to incorporate a grade-separated interchange near Arrawarra. This section was previously part of the adjoining Woolgoolga to Wells Crossing project. This decision was mainly influenced by the opportunity to rationalise access arrangements for the communities of Woolgoolga, Arrawarra, Corindi and Red Rock.

## Community involvement

Extensive community and stakeholder consultation has been undertaken since the options development phase began in September 2001. This has been an important part of the project, helping to define and analyse route options, identify local issues and develop design features and environmental mitigation and management measures.

Consultation has been undertaken with individuals and community groups including property owners along the corridor, the Sikh and Aboriginal communities, Ulitarra Society, Coffs Harbour City Council and government agencies. In addition to the numerous community consultation activities, the RTA also established and frequently updated a project website (see [www.rta.nsw.gov.au/pacific](http://www.rta.nsw.gov.au/pacific)).

Community consultation will remain a vital input to the project, with submissions invited as part of the exhibition of the environmental assessment. Before and during construction, the RTA would continue consultation with the community, Coffs Harbour City Council and government agencies.

## Statutory process

The Minister for Planning has ordered that 13 components of the Pacific Highway upgrade, including the Sapphire to Woolgoolga upgrade, be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* applies. Therefore, the Proposal is to be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979*. The Minister for Planning has also declared the Proposal (along with the other 12 components of the Pacific Highway upgrade) to be a critical infrastructure project under Section 75C of the *Environmental Planning and Assessment Act 1979* on the basis that the project is essential for the State for economic and social reasons.

This report has been prepared in order to comply with the environmental assessment requirements issued by the Director-General for the Proposal on 15 December 2006.

The Proposal was also considered under relevant provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. A referral has been submitted to the Commonwealth Minister for Environment and Water Resources for determination as to whether the Proposal is a controlled action based on the potential impacts on four migratory birds, the Grey-headed Flying-fox and a threatened plant species. Although an assessment of the potential impacts of the Proposal concluded that it was unlikely to result in a significant impact on any identified Commonwealth listed species, the RTA decided to adopt a precautionary approach by submitting a referral to the Commonwealth Minister for Environment and Water Resources. This referral will ensure further independent consideration of the matter and confirmation or otherwise of the conclusion of the assessment undertaken.

The Proposal would have a minor impact on the Solitary Islands Marine Park and as such, consent from the NSW Minister for Primary Industries and the NSW Minister for Climate Change, Environment and Water is required under the *Marine Parks Act 1997* (NSW) in relation to those parts of the Proposal which would impact on the Marine Park.

## The Proposal

The Proposal consists of an upgrade of the Pacific Highway that commences approximately eight kilometres north of Coffs Harbour at Sapphire and extends for approximately 25 kilometres to the vicinity of Arrawarra Beach Road north of Woolgoolga. The Proposal has a southern "upgrade" section from Sapphire to south Woolgoolga and a northern "bypass" section around Woolgoolga.

The Proposal ties into the existing dual carriageway highway at Korora, with a left-in / left-out intersection at Campbell Close on the western side and a right-in / left-out intersection on the eastern side with a new local access road. From Sapphire to south Woolgoolga, the Proposal includes upgrade along the existing route to a controlled access, dual carriageway highway. This section also includes a local access road network that would allow local traffic to travel through the study area without using the highway. In some cases, existing local road infrastructure would be utilised for this network.

The Woolgoolga bypass section is also a controlled access, dual carriageway standard, with the existing highway through Woolgoolga becoming a local access road. The bypass would deviate from the existing highway just north of Hearn's Lake Road and rejoin near Arrawarra Creek.

Apart from the two at-grade intersections at the southern end of the Proposal and emergency vehicle access on the bypass section west of Woolgoolga, all highway access would be via five new grade-separated interchanges, which are proposed at:

- Sapphire (Gaudrons Road / Split Solitary Road).
- Moonee (Moonee Beach Road / Hoys Road).
- Emerald (Fiddaman Road / Graham Drive South).
- South Woolgoolga (Graham Drive North / Hearn's Lake Road).
- Arrawarra (Arrawarra Beach Road).

## Environmental assessment

Environmental risk assessment has been an integral activity in route option development, selection of the preferred route and during the design and environmental assessment of the Proposal. These project phases have each incorporated findings from supporting technical investigations and stakeholder consultations that have enabled the RTA to progressively make informed decisions based on a clear understanding of the environmental and social risks associated with the study area and the Proposal.

### Planning and land use

The Proposal would require either partial or total acquisition of 127 properties that are privately and publicly owned.

All land acquisition would be undertaken in accordance with the RTA's *Land Acquisition Policy* and compensation would be determined in accordance with the *Land Acquisition (Just Terms) Compensation Act 1991*.

There would be no direct property access onto the proposed highway in the long term. A number of properties located within both the Korora rural residential and Moonee development control plan areas currently have direct access onto the existing highway. Both plans provide for alternative access to these properties when either the property or adjacent properties are developed. Until such time as alternative access is provided, temporary highway access would continue, but for safety reasons, only left-in / left-out movements would be permitted.

Along the bypass section, local roads would pass over or under the highway in order to maintain access to properties to the west of the Proposal. Except for an access for emergency vehicles near Newmans Road, no access would be provided along the bypass. Access to the bypass would be via the south Woolgoolga interchange or the Arrawarra interchange.

## **Traffic and access**

Integration of the Proposal with the existing road network and with existing and planned land use in the study area would be achieved through the strategically located interchanges, the new local access road network in the upgrade section and the grade separation of local roads and property accesses in the bypass section. These arrangements would provide an improvement in traffic conditions for both the upgrade and bypass sections compared with existing Pacific Highway conditions. The improved level of service would substantially reduce conflict between through and local traffic including pedestrians and cyclists. The travel benefits from the Proposal would be realised by all road users in the corridor including local residents, regional motorists and long haul freight vehicles.

The Proposal would improve road safety conditions, with a predicted reduction in the crash rate from 29 crashes per 100 million vehicle kilometres travelled to less than 20 crashes per 100 million vehicle kilometres travelled. The Proposal would provide significant travel time benefits, with a predicted reduction of over nine minutes (approximately 40 per cent) to travel the route, from 22.6 minutes to 13.3 minutes in 2031.

## **Noise and vibration**

From Sapphire to south Woolgoolga, the existing highway traffic currently represents the most dominant noise source in the area. With the exception of where the bypass section rejoins the existing Pacific Highway alignment north of Arrawarra Creek, background noise levels along the bypass section are low (consistent with the predominantly rural environment) as there is currently a negligible noise effect from the existing highway. In order to minimise the extent of traffic noise increases, the Proposal incorporates a low-noise pavement and noise walls at various sensitive locations. Architectural (on-property) noise reduction treatments would be offered where noise levels would exceed the minimum noise levels identified in the *Environmental Criteria for Road Traffic Noise* manual (Department of Environment and Climate Change 2001).

Taking into account the proposed noise management measures, the Proposal would provide an overall positive effect for residences in terms of traffic noise. The assessment indicates that 10 years after opening, 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 would experience a reduction in noise levels as a result of the Proposal.

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. It is considered that, 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.

## **Biodiversity**

The Proposal would result in the net loss of approximately 83 hectares of vegetation. Of the five endangered ecological communities within the study area, four (Littoral Rainforest, Lowland Rainforest on Floodplain, Swamp Sclerophyll Forest and Swamp Oak Floodplain Forest) would be directly impacted to various extents. A total of approximately 18 hectares of endangered ecological communities would be affected. Eight individuals of the vulnerable flora species Rusty

Plum would be directly affected by the Proposal. Other endangered or vulnerable flora species in the vicinity of, but not directly affected by, the Proposal include: Slender Marsdenia, *lindsaea incisa*, Moonee Quassia and *typhonium sp.*

The Proposal would impact on the habitat of a number of fauna species, 16 of which are listed as threatened under the *Threatened Species Conservation Act 1995* and one, the Grey-headed Flying-fox, also listed under the *Environment Protection and Biodiversity Conservation Act 1999*.

The RTA has committed to various flora and fauna related mitigation measures, which include the development and implementation of flora and fauna management measures as part of the construction environmental management plan, including the installation of fauna exclusion fencing and fauna friendly culverts as part of the Proposal design, as well as provision of compensatory habitat. Taking into account the proposed mitigation and management measures, the assessment concluded that the impacts on flora and fauna, including threatened and endangered species are not significant.

## Aboriginal heritage

Aboriginal heritage includes physical (archaeological) evidence and cultural heritage areas. The Aboriginal cultural heritage environment contains an invisible overlay of attachments and meanings. Aboriginal people can and do hold equally strong and equally legitimate attachments to natural, unmodified, features of the landscape, and to entire landscapes themselves.

The Proposal would affect eight archaeological sites and seven potential archaeological deposits (two associated with recorded archaeological sites). The potential impact on Aboriginal heritage has been considered during the route investigation phase and subsequently through the development of the concept design of the Proposal. During this process a number of refinements have been made to the concept design to avoid and / or minimise potential impacts to identified Aboriginal heritage sites and or places. The Proposal also incorporates management measures to minimise potential impacts. The RTA will continue its close consultation with relevant Aboriginal groups and the Department of Environment and Climate Change in relation to management of potential impacts to these identified sites.

## Non-Aboriginal heritage

Seven heritage items have been identified within the study area through a combination of heritage database searches, literature review and an investigation of the study area. With the exception of the Solitary Islands Marine Park, which is listed on the Register of the National Estate, none of the identified items are found on advisory or statutory heritage listings. Archival recording by a qualified heritage expert would be undertaken for those items affected by the Proposal.

The impact on the Solitary Islands Marine Park relates to removal of disused bridge piers at Double Crossing Creek and Cunninghams Creek and the proposed introduction of a proposed bridge abutment at Double Crossing Creek, the latter being limited to approximately 15 square metres. Potential water quality impacts during the construction phase would be managed and monitored through proven techniques.

## Economic and social impacts

The Proposal would have both positive and negative impacts on a range of socio-economic issues including:

- Of the 40 agricultural properties affected, 45 per cent would be affected to a degree where the viability of the commercial property would be compromised. The RTA will assist affected landowners, through the engagement of specialist consultants, to identify opportunities for use of residual agricultural land and assessment of options for agricultural diversification (including comparative set up costs).

- The banana properties which would be seriously or critically affected by the Proposal comprise 3.7 per cent of the area of land under banana production in the Coffs Harbour / Woolgoolga region, which corresponds to 0.3 per cent of the total area of banana production in NSW.
- Potential impacts on the Sikh culture as a result of the Proposal primarily relate to agricultural (mainly banana) business effects and property acquisition.
- An overall improvement to accessibility and cohesion for communities in the study area due to the introduction of a separate local road network that would substantially enhance road access along the corridor and across the highway, without the need to engage with highway traffic.
- Reduction of patronage to a limited number of highway fronting businesses along the upgrade section and in Woolgoolga.
- Potential economic benefits to many local businesses and especially tourism operators in the study area due to improved local accessibility, reduced traffic volumes (in Woolgoolga) and improved amenity (also attributable to the broader Pacific Highway Upgrade Program).

### **Soil and surface water quality**

The underlying geology and topography of the study area has given rise to varied conditions along the proposed alignment, resulting in a mosaic of soil landscapes through which the Proposal would pass. There is a low risk of acid sulfate soils for a majority of the length of the study area which would be managed through the implementation of relevant mitigation measures as part of the construction environmental management plan.

There are in excess of 20 watercourse crossings in the study area. Major creeks include Hayes Creek, Sugarmill Creek, Cunninghams Creek, Skinners Creek, Moonee Creek, Darkum Creek, Double Crossing Creek, Woolgoolga Creek and Arrawarra Creek. Some of these 20 watercourses (including Sugarmill Creek) are in the catchment of designated SEPP 14 coastal wetlands, located in both upstream and downstream directions, and all drain into the Solitary Islands Marine Park. Past water quality monitoring has indicated that qualitative analysis correlates with the quantitative analysis and shows a strong correlation between poor water quality and high rainfall events.

Construction of the Proposal would result in considerable disturbance to soils particularly within or immediately adjacent to drainage lines and waterways. This is recognised as one of the main potential environmental risks to the integrity of local water quality. Best practice water quality controls would be implemented during the construction phase. During operation, the design would provide for stormwater to be directed to constructed water quality control structures for treatment prior to release into the creek systems. These structures would also function as chemical spill containment structures.

### **Urban design and landscaping**

The Proposal would have varying visual impacts on the existing environment. As the bypass section of the Proposal is traversing through rural/ agricultural land that is away from the existing highway, the visual impacts would be greater than through the upgrade section because of the strong presence of the existing highway formation and associated roadside furniture within the existing environment.

The bypass section of the Proposal traverses predominantly rural / agricultural landscape where no highway or major road formation currently exists- the bypass would pass through numerous local spurs and ridges resulting in large cut and fill earthworks. The bypass section of the Proposal has been designed to tuck the alignment behind the lower foothills to the west of Woolgoolga to minimise the highway's visibility further afield.

As part of the Proposal, an urban design and landscaping strategy has been developed for the entire length. This strategy incorporates landscaping features such as planting as well as producing design principles for the treatment of roadside furniture, cut and fill batters and fauna movement corridors.

## Environmental management

The RTA has committed to a range of environmental management measures to mitigate potential adverse environmental impacts. These are detailed within a draft Statement of Commitments (Appendix A). Should the Proposal be approved, a construction environmental management plan would be developed, to direct the procedures that would be undertaken during the pre-construction, construction and operation phases of the project to mitigate potential impacts. This plan would incorporate the draft Statement of Commitments as well as any conditions of approval imposed by the NSW Minister for Planning.

## Justification

The Pacific Highway Upgrade Program is intended to provide substantial improvements to the standard of the Pacific Highway between Hexham and the Queensland border, resulting in improved road safety, reduced travel times and improved economic efficiency at local, regional and national levels. The Proposal would assist in meeting the objectives of the program by:

- Reducing road accidents and injuries.
- Reducing travel times.
- Providing an improved level of service for road users.
- Providing a significant improvement in local accessibility.
- Reducing freight transport costs.
- Involving the community and considering their interests during the development of the Proposal.
- Providing a route that supports economic development.
- Being managed in accordance with the principles of ecologically sustainable development.
- Providing an acceptable investment by government as indicated by the road user benefit cost ratio.

The suitability of the route for the Proposal has been established by way of a comprehensive option identification and evaluation process. Avoidance, minimisation and mitigation of potential environmental impacts was a major consideration during the route planning phase and this continued through the concept design and environmental assessment phases of the Proposal.

The Proposal would be constructed to meet existing best practice environmental standards for major infrastructure delivery and performance would be monitored to ensure that this is achieved. Consultation with the community would continue throughout construction, should the Proposal be approved.

## Exhibition of the environmental assessment

There will be project displays at the following locations:

- NSW Department of Planning, Information Centre, 23-33 Bridge Street, Sydney.
- NSW Roads and Traffic Authority, Ground floor, Centennial Plaza, 260 Elizabeth Street, Surry Hills.
- RTA Motor Registry, 34 Gordon Street, Coffs Harbour.
- Coffs Harbour City Council, corner of Coff and Castle streets, Coffs Harbour.
- Woolgoolga Public Library, Ganderton Street, Woolgoolga.
- Sapphire Service Station, Pacific Highway, Sapphire.
- Yarrawarra Cultural Centre, 170 Red Rock Road, Corindi Beach.
- RTA Pacific Highway Office, 21 Prince Street, Grafton.
- The Nature Conservation Council of NSW, Level 2, 301 Kent St, Sydney, NSW 2000.

Locations for staffed displays:

- Woolgoolga Public Library Meeting Room, Ganderton Street, Woolgoolga.
- Shop 16, Moonee Beach Shopping Centre, Moonee Beach.

Copies of the environmental assessment documents are available for view at:

- Department of Planning and RTA websites.
- Coffs Harbour City Council, corner of Coff and Castle streets, Coffs Harbour.
- Woolgoolga Public Library, Ganderton Street, Woolgoolga.
- RTA Pacific Highway Office, 21 Prince Street, Grafton.

Submissions should be sent to:

The Director  
Major Infrastructure Assessments  
Department of Planning  
GPO Box 39  
Sydney NSW 2001