

**MAJOR PROJECT ASSESSMENT:  
TUGUN BYPASS**

Director-General's  
Environmental Assessment Report  
Section 75I of the  
*Environmental Planning and Assessment Act 1979*

December 2005

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Published December 2005  
NSW Department of Planning  
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## FOREWORD

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The NSW Roads and Traffic Authority (RTA) and Queensland Department of Main Roads (QDMR) are proposing to construct the Tugun Bypass to alleviate traffic congestion on the Gold Coast Highway/Pacific Highway corridor between Currumbin and Tweed Heads. The project would traverse areas under the jurisdictions of Queensland and NSW. The proposed alignment also passes through the Gold Coast (Coolangatta) Airport which is Commonwealth land and currently leased by Gold Coast Airport Limited.

In NSW, the project is subject to assessment under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the approval of the Minister for Planning is required. This report was prepared in accordance with Section 75I of the EP&A Act, which requires the Director-General to provide a report to the Minister for the purposes of the Minister's consideration of the application for approval to carry out the project.

The report's purpose is to review the project's key issues, the environmental assessment, submissions to the environmental assessment, further information provided by the Proponent and any other information identified by the Department concerning the project's potential environmental impacts. The report documents this independent assessment of the project and concludes that the potential environmental impacts associated with the project could be mitigated to an acceptable level by adopting the management measures referred to in this report, including the Proponent's Statement of Commitments and recommended Conditions of Approval identified by the Department.

The key mitigating measures required to ensure that the proposed project delivers good environmental and social outcomes include:

- ♦ a stringent environmental management framework to ensure that construction impacts are avoided, mitigated or managed;
- ♦ good communication strategies with the affected community and stakeholders;
- ♦ a well-defined compensatory offset package that would be implemented prior to the project opening to traffic, thereby achieving an immediate and long-term conservation outcome in NSW;
- ♦ comprehensive planning and communication to manage cultural heritage issues during construction to the satisfaction of the Department and in consultation with Traditional Owners and the DEC; and
- ♦ processes to ensure that opportunities to improve pedestrian access, cycleways and public transport are realised within the region.

Sam Haddad  
**Director General**  
**Department of Planning**



## EXECUTIVE SUMMARY

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The NSW Roads and Traffic Authority (RTA) and Queensland Department of Main Roads (QDMR) are proposing to construct the Tugun Bypass to alleviate traffic congestion on the Gold Coast Highway/Pacific Highway corridor between Currumbin and Tweed Heads. The project would traverse areas under the jurisdictions of Queensland and NSW. The proposed alignment also passes through the Gold Coast (Coolangatta) Airport which is Commonwealth land and currently leased by Gold Coast Airport Limited.

The proposed project is subject to Part 3A of the *Environmental Planning and Assessment Act 1979* and requires the approval of the Minister for Planning.

The proposed project involves construction and operation of a 7km long bypass that would predominantly follow an alignment to the west of the existing Gold Coast Airport main runway. Two sections are located within NSW – a southern section incorporating a grade-separated interchange at the Tweed Heads Bypass (approximately 1.5km in length); and a section between the Gold Coast Airport and the Queensland border (approximately 0.75km in length). The proposal would consist of a four-lane restricted access motorway with a central median to separate north-south traffic flows at a posted speed of 100km/h. The median would be wide enough to allow future upgrading to six lanes. A tunnel of up to 400 metres would be required at the southern end of the airport runway to comply with airport safety (obstacle limitation surface) requirements.

The capital cost of the proposal is \$360 million. The Queensland Government has committed \$240 million to the project, and the Commonwealth Government has committed \$120 million. If approved, construction would begin by early 2006 and take approximately 18 to 24 months to complete.

The proposed project would provide a direct interstate transport link between the Pacific Highway in New South Wales and the Pacific Motorway in Queensland, with approximately 55% of traffic through the Tugun Corridor utilising the proposed project. This would significantly ease the traffic burden on the existing road network. Without the proposed project, travel times during peak periods along the existing Gold Coast Highway route would exceed 30 minutes by 2017. The proposed project would reduce this link to approximately 9 minutes. The proposed project would also improve amenity and reduce air pollution along the existing highway; and provide opportunities for improved public transport. Notwithstanding, the proposed project would have potentially significant environmental impacts that would require careful management.

Ecological impacts arise due to the high diversity of vegetation communities that provides habitat for flora, mammal, bird, amphibian and bat species, many of which are threatened within NSW. The proposed project also traverses the ecosystems adjacent to the Cobaki Broadwater.

Importantly, the alignment of the proposed project has been developed to avoid ecologically sensitive areas including Swamp Orchid habitat, Long-nosed Potoroo habitat and Wallum Sedge Frog breeding ponds. The residual impact of the removal of 45 hectares of native vegetation communities (19 hectares in NSW) would be offset by a well-defined and complete compensatory habitat package that comprises approximately 80 hectares. The proposed compensatory habitat areas, supported by management strategies, would provide a medium- to long-term net biodiversity benefit in the locality. Particularly important would be the buffer around the Cobaki Broadwater and protection of significant habitat for the Long-nosed Potoroo.

A number of known archaeological sites occur adjacent to the proposed project. During the initial stages of construction, there would be potential for new cultural material to be discovered, particularly isolated artefacts or material as part of a larger midden site. There is also the (low) potential to discover burial sites within some areas, particularly near the Queensland border (within NSW and Commonwealth land). However, for much of the route, with the exception of the tunnel, construction would result in relatively limited ground disturbance. Therefore, material below the new road surface would maintain integrity. Where artefacts are discovered and can be salvaged, they would be left *in situ* if practicable or be returned on-site. Ongoing monitoring and consultation with Traditional Owners would occur throughout the construction period.

On balance, the Department considers that the proposed Tugun Bypass project would deliver on its stated project objectives. In particular, the additional road capacity would remove a significant proportion of inter-state vehicles from the Gold Coast Highway, including heavy vehicles, and would provide travel time savings of approximately 20 minutes in 2017. Without the proposed Bypass, travel times on the Gold Coast Highway would stretch beyond 30 minutes. The project would create an effective and safe inter-state transport corridor and would delay the need for a future upgrading of the Gold Coast Highway.

The short- to medium-term reduction in traffic on the Gold Coast Highway would provide substantial social benefits in the form of improved accessibility for local and tourist traffic, amenity benefits for residents of Tugun and capacity to improve public transport along the Gold Coast Highway.

The recommended Conditions of Approval would ensure that the proposed project delivers a good environmental and social outcome, including:

- ◆ a stringent environmental management framework to ensure that construction impacts are avoided, mitigated or managed;
- ◆ good communication strategies with the affected community and stakeholders;
- ◆ a well-defined compensatory offset package (approximately 80 hectares) that would be implemented prior to the project opening to traffic, thereby achieving an immediate and long-term conservation outcome in NSW;
- ◆ comprehensive planning and communication to manage cultural heritage issues during construction to the satisfaction of the Department and in consultation with Traditional Owners and the DEC; and
- ◆ processes to ensure that opportunities to improve pedestrian access, cycleways and public transport are realised within the region.

Overall, the proposed Tugun Bypass project could be approved subject to the effective implementation of the Proponent's Statement of Commitments and the Department's recommended Conditions of Approval.

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## GLOSSARY AND ABBREVIATIONS

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|                    |                                                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DEC                | Department of Environment and Conservation                                                                                                                                                 |
| DEH                | Department of Environment and Heritage (Commonwealth)                                                                                                                                      |
| Department, the    | Department of Planning                                                                                                                                                                     |
| Director-General   | Director-General of the Department of Planning                                                                                                                                             |
| DNR                | Department of Natural Resources <sup>1</sup>                                                                                                                                               |
| DoP                | Department of Planning                                                                                                                                                                     |
| DPI (Fisheries)    | Department of Primary Industries (Fisheries)                                                                                                                                               |
| EIS                | Environmental Impact Statement – Tugun Bypass, Stewart Road to Kennedy Drive (December 2004)                                                                                               |
| EMP                | Environmental Management Plan                                                                                                                                                              |
| EP&A Act           | <i>Environmental Planning and Assessment Act 1979</i>                                                                                                                                      |
| GCAL               | Gold Coast Airport Ltd                                                                                                                                                                     |
| Project            | The Tugun Bypass as proposed by Queensland Main Roads and the NSW Roads and Traffic Authority in the EIS and Submissions Report                                                            |
| Proponent          | The joint Proponents for the project are Queensland Main Roads and the NSW Roads and Traffic Authority. The Proponent for the purposes of the EP&A Act is the Roads and Traffic Authority. |
| RTA                | Roads and Traffic Authority                                                                                                                                                                |
| SoC                | Statement of Commitments.                                                                                                                                                                  |
| Submissions Report | Submissions Report prepared in accordance with 75H(6) of the EP&A Act – Tugun Bypass (October 2005)                                                                                        |
| TSC Act            | <i>Threatened Species Conservation Act 1995</i>                                                                                                                                            |
| QDMR               | Queensland Department of Main Roads                                                                                                                                                        |

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<sup>1</sup> NSW Government Administrative Orders gazetted on 26 August 2005 established the new Departments of Planning and of Natural Resources from the former Department of Infrastructure, Planning and Natural Resources.

# 1 INTRODUCTION

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## 1.1 The Project

The NSW Roads and Traffic Authority (RTA) and Queensland Department of Main Roads (QDMR) as joint proponents are proposing to construct the Tugun Bypass to alleviate traffic congestion on the Gold Coast Highway/Pacific Highway corridor between Currumbin and Tweed Heads. The project would traverse areas under the jurisdictions of both Queensland and NSW. The proposed alignment also passes through the Gold Coast (Coolangatta) Airport which is Commonwealth land and currently leased by Gold Coast Airport Limited. The location and proposed alignment are shown in Figure 1.

The proposed project involves construction and operation of a 7km long bypass that would predominantly follow an alignment to the west of the existing Gold Coast Airport main runway, and would consist of a four-lane restricted access motorway with a central median to separate north-south traffic flows at a posted speed of 100km/h. The median would be wide enough to allow future upgrading to six lanes. Grade-separated interchanges would be provided at Stewart Road and at the Tweed Heads Bypass (around 1km north of Kennedy Drive) in NSW and would provide for all traffic movements and connections to the local road network. The proposal also includes environmental mitigation initiatives and a compensatory habitat package.

The objectives of the proposed project are to separate local traffic from tourist and most heavy vehicle traffic; reduce congestion, travel times and air pollution along the existing highway; and provide opportunities for improved public transport. Without appropriate mitigation, the project could have significant ecological, cultural heritage and groundwater impacts within NSW for a project designed to alleviate traffic impacts within Queensland.

The capital cost of the proposal is \$360 million. The Queensland Government has committed \$240 million to the project, and the Commonwealth Government has committed \$120 million. If approved, construction would begin by early 2006 and take approximately 18 to 24 months to complete.

No design modifications to the concept design are proposed in the Submissions Report, however, changes have been made to the package of mitigation measures and compensatory habitat. These changes would either be neutral or would minimise the environmental effects of the project.

## 1.2 Statutory Framework (NSW)

### 1.2.1 State Environmental Planning Policy No. 63 – Major Transport Projects

The proposed Tugun Bypass project is identified under State Environmental Planning Policy (SEPP) No. 63 – Major Transport Projects which enables the entire project to be assessed under Part 5 of the *Environmental Planning and Assessment Act (EP&A) 1979*.

SEPP 63 was gazetted 2 February 2001 and amended on 2 September 2005 to include the proposed Tugun Bypass project. It establishes a uniform assessment and approval process for major transport projects and makes development associated with these projects permissible without development consent. Subclause 5 (2) of SEPP 63 provides that SEPP 14 Coastal Wetlands does not apply to the project. Environmental assessment requirements of Part 5 of the EP&A Act still apply.



Figure 1: The proposed Tugun Bypass project (source: Submissions Report)

### 1.2.2 Transition to Part 3A

The Proponent determined that the project is likely to significantly affect the environment and required the preparation of an Environmental Impact Statement (EIS) in accordance with Section 112 of the EP&A Act. As the RTA (being a joint Proponent) is both the Proponent and a determining authority for the proposal and an EIS was prepared, the former Division 4 of Part 5 of the EP&A Act applied. As such, the approval of the Minister for Planning would have been required for the proposal.

The Proponent sought the Director-General's requirements on 22 September 2004 for preparation of an Environmental Impact Statement (EIS). Director-General's Requirements were issued on 1 October 2004. An EIS for the proposal was subsequently prepared and publicly exhibited between 13 December 2004 and 15 March 2005. A Species Impact Statement (SIS) was also exhibited concurrently as the proposal would be likely to have a significant impact on threatened species. Eighty eight (88) representations were received in response to the exhibition of the EIS and SIS.

Part 3A of the EP&A Act commenced on 1 August 2005 and Division 4 of Part 5 was repealed. The Tugun Bypass project requires an EIS to be obtained within the meaning of Part 5 of the EP&A Act and, by order of the Minister gazetted on 29 July 2005, is now subject to Part 3A. The Minister for Planning is the relevant approval authority.

On 6 October 2005 the Proponent lodged a project application under Section 75E of the EP&A Act. On 20 October 2005, pursuant to Clause 8J of the *Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Regulation 2005*, the Director-General adopted the previously issued Director-General's requirements as environmental assessment requirements and accepted the EIS and SIS as the environmental assessment and the public exhibition period for the purposes of Part 3A for the proposed Tugun Bypass project.

The Proponent lodged a Submissions Report on 14 October 2005, however was not formally accepted until such time as the project had been accredited for the purposes of Part 3A (therefore accepted on 20 October 2005). A Preferred Project Report was not required by the Director-General as no substantive changes were made to the project as described in the EIS. In accordance with section 75F(6) of the EP&A Act, the Proponent prepared a draft Statement of Commitments that was included in the Submissions Report.



## 2 OVERVIEW OF ENVIRONMENTAL ISSUES

The Department has reviewed the Environmental Impact Statement (EIS), the Species Impact Statement (SIS), submissions to the EIS and SIS, the Submissions Report and additional information provided by the Proponent. A number of environmental issues have been identified as associated with the proposal as reviewed in Table 1. A more detailed consideration of key issues is provided in Section 3 of this report. It is important that this Section be read in conjunction with the Submissions Report to understand how all issues raised in submissions were addressed. The Department is satisfied that the responses provided by the Proponent in the Submissions Report are reasonable.

Eighty eight (88) representations to the EIS and SIS were received, 51 of which were from individuals. Ten submissions were received from local businesses, eight from environment groups, seven from indigenous groups/representatives and six from local community groups. Submissions were also made by the Gold Coast City Council, Tweed Shire Council, the Department of Environment and Conservation (DEC), the Department of Primary Industries (Fisheries), the Department of Natural Resources (DNR) and the Queensland Environment Protection Authority. The Department received a late submission from the Department of Lands.

In addition, the Department submitted a number of queries related to project justification, traffic modelling, public transport improvements, the initial compensatory habitat package, groundwater impacts, noise and vibration and risk assessment. Key issues are discussed further in Section 3.

**Table 1: Summary of environmental issues raised in submissions associated with the project.**

| Issue                         | No of submissions | Department's Consideration                                                                                                                                                 |
|-------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Support for proposed project  | 19                | Support noted                                                                                                                                                              |
| Objection to proposed project | 25                | Objection noted                                                                                                                                                            |
| <b>Project Justification</b>  |                   |                                                                                                                                                                            |
| Need for the project          | 12                | Key issue, see Section 3.1.                                                                                                                                                |
| Planning process              | 14                | The project is consistent with strategic planning documents, including the AusLink White Paper (Australian Government Department of Transport and Regional Services, 2004) |
| Statutory process             | 8                 | The project has met all requirements of the EP&A Act. Refer to Section 1.1 for more detail.                                                                                |
| <b>Project Alternatives</b>   |                   |                                                                                                                                                                            |
| Route selection               | 44                | Key issue, see Section 3.1.                                                                                                                                                |
| A options                     | 13                | These alternatives do not meet the key objectives of the proposed project.                                                                                                 |
| B options                     | 1                 | Key issue, see Section 3.1.                                                                                                                                                |
| Other C options               | 2                 | The preferred 'C' option (C4) minimises environmental impacts.                                                                                                             |
| Far western route             | 1                 | This alternative does not meet the key objectives of the proposed project.                                                                                                 |

| Issue                     | No of submissions | Department's Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Boyd Street interchange   | 3                 | <p>An interchange is not proposed at Boyd Street as part of the Tugun Bypass project. The Department considers that any interchange at this location would be inconsistent with the proposed project and with the key objectives of the project.</p> <p>The proposed project does not preclude the construction of a Boyd Street overpass. However, this is not part of the proposed project. A Boyd Street overpass would require further approvals under the EP&amp;A Act.</p>                                                                                                                                 |
| <b>Ecological Impacts</b> |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Assessment                | 24                | Significant ecological assessment was undertaken in preparing the EIS, SIS and additional information. Additional studies have been undertaken and included in the Submissions Report.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Impacts                   | 26                | Key issue, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Specific flora            | 24                | Key issue, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Specific fauna            | 33                | Key issue, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ecological communities    | 20                | Key issue, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Compensatory habitat      | 23                | Key issue, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wildlife corridors        | 5                 | This issue is incorporated into the discussion on compensatory habitat, see Section 3.2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Cultural Heritage</b>  |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Assessment                | 16                | Significant cultural and archaeological assessment was undertaken in preparing the EIS and additional information. Additional studies have been undertaken and included in the Submissions Report.                                                                                                                                                                                                                                                                                                                                                                                                               |
| Impacts                   | 36                | Key issue, see Section 3.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Consultation              | 10                | Significant consultation was undertaken in preparing the EIS and additional information. Further consultation would be undertaken prior to and during construction of the proposed project.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Native Title              | 2                 | This issue is beyond the scope of this assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Groundwater</b>        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Construction              | 3                 | <p>Changes to groundwater flows could have negative impacts within NSW if not managed adequately. A network of extraction bores and re-injection areas would remove water from the construction area. A staged approach would be adopted as to minimise the time, area and depth of influence (Statement of Commitment (SoC) No. 18).</p> <p>DNR have noted that due to the presence of Acid Sulfate Soils, dewatering is not a feasible construction method and that re-injection of the water table would have to occur. An application to DNR for bore licences would be required under the NSW Water Act</p> |

| Issue                                     | No of submissions | Department's Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation                                 | 6                 | The tunnel has the potential to permanently restrict groundwater flows and therefore further impact ecological communities and affect water resources in NSW. However, mitigation consisting of a network of cross-alignment drains to allow unhindered groundwater movement is proposed (SoC No. 18). Remedial actions, such as increasing/decreasing the capacity of the groundwater transfer system or the treatment of waters, would be implemented if monitoring identified issues.                                                                                                                                                                                                                                                                                     |
| <b>Soils, water quality and hydrology</b> |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Assessment                                | 12                | Significant investigations were undertaken in preparing the EIS and additional information. Further detailed investigations would be undertaken prior to and during construction of the proposed project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Construction                              | 15                | SoC No. 19 describes a Soil and Water Management Plan, including an Erosion and Sediment Control Plan, which would describe best management practices for the control of erosion, sediments and pollution during the construction period. Topsoil management (SoC No. 20) and water quality safeguards (SoC No. 21) would also be implemented.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Operation                                 | 14                | SoC No. 19 also proposes a maintenance program for constructed wetland treatment systems that would be developed and commence after the opening of the project and continue throughout its operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Flooding                                  | 3                 | The existing surface hydrology, including catchment areas and drainage paths, would be described in the Soil and Water Management Plan (SoC No. 19). Locations for catch drains/banks (and associated structures) would be established prior to the commencement of construction to ensure that surface water is controlled and flooding would not be exacerbated.                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Noise and Vibration</b>                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Assessment                                | 3                 | Significant investigations were undertaken in preparing the EIS and additional information. Further detailed investigations would be undertaken prior to and during construction of the proposed project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Construction                              | 4                 | SoC No. 6 describes a Noise and Vibration Management Plan that would ensure noise mitigation strategies are implemented.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Operation                                 | 9                 | <p>Noise reductions along the Gold Coast Highway through Tugun and Bilinga would result in considerable improvements for local residents and visitors. At the southern end of the Bypass residential areas are currently subject to existing traffic noise. Once operational, local traffic would continue to use the Gold Coast Highway corridor, however the northern end of the Bypass route is close to residential areas, previously unaffected by traffic noise.</p> <p>The design and location of noise barriers would be implemented in accordance with the Road Traffic Noise Management: Code of Practice (QDMR 2000) and the Environmental Criteria for Road Traffic Noise (NSW Environment Protection Authority 1999) depending on jurisdiction (SoC No. 6).</p> |

| Issue                              | No of submissions | Department's Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Air Quality</b>                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Assessment                         | 2                 | Significant investigations were undertaken in preparing the EIS and additional information. Further detailed investigations would be undertaken prior to and during construction of the proposed project.                                                                                                                                                                                                                                                                                    |
| Construction                       | 4                 | During construction there is the potential for short term dust impacts on exposed areas. Mitigation measures to stabilise exposed areas and the use of dust suppression methods would minimise impacts on air quality and surrounding residences (SoC No. 4).                                                                                                                                                                                                                                |
| Operation                          | 7                 | Once operational, the proposed project is expected to result in a decrease in greenhouse gas emissions by 2017.<br><br>Monitoring of air quality parameters in the tunnel after the opening of the Bypass and throughout its operation which would include carbon monoxide concentrations only. The Operation Environmental Management Plan would contain procedures for reporting and remedial action in the event of any exceedences of NEPM goals for carbon monoxide levels (SoC No. 4). |
| <b>Traffic and Transport</b>       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Existing highway and local traffic | 16                | Once operational the Tugun Bypass would alleviate a significant proportion of traffic from the Gold Coast Highway.                                                                                                                                                                                                                                                                                                                                                                           |
| Maintenance                        | 11                | The Proponent has noted that the project would include a Design-Construct-Maintain contract that specifies a 10 year maintenance period.                                                                                                                                                                                                                                                                                                                                                     |
| Hazards and risk                   | 8                 | SoC No. 27 describes processes and strategies that would minimise the risk of an incident involving hazardous material during construction and operation of the Bypass and to effectively manage the impacts should an incident occur.                                                                                                                                                                                                                                                       |
| <b>Community Impacts</b>           |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Landuse and property               | 10                | Negative impacts or restrictions on surrounding land uses or properties are not expected.                                                                                                                                                                                                                                                                                                                                                                                                    |
| Pedestrian / cyclist access        | 4                 | The proposed project could modify the access currently used by bushwalkers to cross from Currumbin to either Currumbin Waters or the Border Ranges. The Department supports a review of public walking tracks in consultation with Gold Coast City Council during the detailed design phase (SoC No. 26).                                                                                                                                                                                    |
| Visual impacts                     | 6                 | SoC No. 3 identifies landscaping issues that would be resolved following each stage of construction and during operation.                                                                                                                                                                                                                                                                                                                                                                    |

### 3 ASSESSMENT OF THE PROJECT'S KEY ISSUES

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*This Section of the Report provides the Department's assessment of the Project's key issues. The assessment is based on an examination of the environmental assessment, issues raised in submissions, the Proponent's Submissions Report and, where required, further assessment by the Department. It is important that this Section be read in conjunction with the Proponent's Submissions Report to understand how all issues raised were addressed.*

#### 3.1 Justification for the Proposal

##### 3.1.1 Background

The proposed Tugun Bypass aims to satisfy two primary objectives:

- ♦ to provide an efficient, high-speed link for freight and other regional and interstate traffic between Queensland and NSW; and
- ♦ to separate heavy vehicles and interstate traffic from local and tourist traffic in the Tugun area.

The Proposal is identified in a range of National, State and Regional Planning documents, including Auslink, South East Queensland Regional Plan and South East Queensland Infrastructure Plan 2005 – 2026, and the Gold Coast City Transport Plan. The Gold Coast City Transport Plan advocates a balanced and integrated transport and land use strategy, and proposes a functional road hierarchy that aligns with road function with more emphasis placed on the type of traffic using the road, rather than the volume of traffic accommodated. It is considered that an upgraded line haul system (along the old Coast Highway) of bus priority measures, moving to light rail or dedicated busway in the future would provide a better (transport) balance. The following key strategy proposals of relevance to the Tugun area are:

- ♦ Tugun Bypass: extension of the Pacific Motorway west of the Gold Coast Airport to link with Tweed Heads Bypass in NSW;
- ♦ Gold Coast Highway: downgraded to coastal distributor to reduce the impact of traffic growth in key tourist precincts.
- ♦ Coolangatta Rail: Extension of existing Gold Coast Rail line to a major public transport interchange at Gold Coast Airport.

(Note: The EIS identifies numerous applicable national, regional and local planning and transport strategies that provide a context to the proposal. A summary of prevalent strategies and a list of related policies is attached).

The Gold Coast Highway currently links the Tweed Heads Bypass (NSW) and the Pacific Motorway (Qld) through the Bilinga and Tugun communities. Both the Tweed Heads Bypass and the Pacific Motorway are motorway standard interstate highways, with their predominant function being the efficient movement of freight and long distance vehicle trips between northern NSW and south east Qld. The Gold Coast Highway at this location is a four lane, median divided urban arterial road that caters for these freight and interstate vehicle trips, plus local and tourist vehicle trips to activities along the coast, Coolangatta and the Gold Coast Airport. Consequently conflict exists between providing a fast, efficient highway for freight and interstate traffic, and supplying the high level of access required for local and tourist trips (There are currently ten at grade intersections, with four signalised over the 3.5km).

The proposed bypass would provide a 'missing link between the two motor way standard roads and would enable the separation of through and local traffic movements. By being a more direct and efficient route it would be more attractive to through vehicles. However, Type I and IIa dangerous goods vehicles would be excluded from the bypass and make up 1 percent of all vehicles using the existing corridor. These vehicles would continue to use the Gold Coast Highway. The proposed bypass would also allow the Gold Coast Highway to return to its intra regional function of providing access to local activities and services.

The Gold Coast Highway (and service roads) carries approximately 72,000 vehicles per day, including 5,900 heavy vehicle movements. Traffic modelling of the project has identified that some 55% of traffic through the Tugun-Bilinga Corridor would use the proposed bypass. A significant proportion will be heavy vehicles, with over 10% of projected movements on the Tugun Bypass being heavy vehicle movements. This compares to 2.5% for heavy vehicle movements on the Gold Coast Highway following the construction of the bypass in 2007.

Modelling has shown that average travel speeds during peak periods along the Gold Coast Highway in 2007 will range from less than 10 to 47km/h, while in 2017 they will decrease to a range of less than 10 to 38km/h.

With the proposed bypass, average speeds during peak periods in 2007 and 2017 will range from 44 to 46km/h. In 2017 traffic conditions on the Gold Coast Highway would improve, traffic would be free flowing and operating at about 75% of its capacity during peak periods. For the remainder of the surrounding road network, the proposed bypass would either improve traffic conditions or have a negligible impact. However, it should be noted, that the Pacific Motorway north of Stewart Road would experience increase in traffic flows requiring an upgrade to six lanes at this location (but not as part of this project).

The proposed bypass will also improve travel times along the Gold Coast Highway as highlighted in the following table:

**Table 2: Travel Times from Stewart Road (Qld) to Kennedy Drive (NSW)**

| <b>Without Bypass</b> | <b>2002</b> | <b>2017</b> |
|-----------------------|-------------|-------------|
| Morning Peak          | 9-11 min    | > 30 min    |
| Evening Peak          | 12 min      | > 30min     |
| <b>With Bypass</b>    | <b>2002</b> | <b>2017</b> |
| Morning Peak          | 8 min       | 9 min       |
| Evening Peak          | 8 min       | 9 min       |

Travel time along the proposed bypass would be approximately 5 minutes, therefore travel times along the bypass would be 3 – 4 minutes quicker than along the Gold Coast Highway in 2007 and 2017 respectively.

#### Comment

The Department notes that the project meets the primary objectives. In particular, the project:

- ♦ provides an efficient road link for freight and other regional and interstate traffic between Queensland and New South Wales; and
- ♦ separates through (including heavy vehicle movements) and local / tourist movements in the Tugun area, resulting in improved safety and efficiency; and
- ♦ reduces travel times for interstate traffic, with modelled travel time savings of approximately 20min in 2007;

The primary objective of providing an efficient, high speed link for freight and other regional and interstate traffic between Queensland and New South Wales benefits both states. However, the second primary objective of separating heavy vehicles and interstate traffic from local and tourist traffic in the Tugun area, arguably provides significantly greater benefits within Queensland and in particular to the communities of Tugun and Bilinga.

### 3.1.2 Key Issues

Key issues identified for the justification of the project in the EIS and raised in the exhibition process include:

- ♦ Consideration of project alternatives (corridor options);
- ♦ Highway performance and increasing population and economic growth;
- ♦ Integrated transport response and improved public transport, pedestrian and cycle facilities to counter traffic demand; and
- ♦ Improvements to safety and amenity.

#### Consideration of project alternatives (corridor options)

The development and evaluation of project alternatives (corridor options) was undertaken on the basis of the following objectives:

- ♦ the provision of a road corridor to separate interstate freight and other movements from local and tourist traffic along the coastal area;
- ♦ 100 km/h posted speed in conformity with the adjacent sections of the Pacific Highway / Motorway;
- ♦ support for public transport opportunities on the Gold Coast Highway, such as dedicated bus lanes and the provision of light rail;
- ♦ preservation of a rail corridor to Coolangatta;
- ♦ improving safety for pedestrians and cyclists between the Gold Coast and Tweed Heads;
- ♦ reduced travel times for interstate traffic; and
- ♦ reduced accident and severity rates.

The wider corridor available to accommodate the bypass is relatively narrow with significant natural and built constraints, including the Cobaki Broadwater and Gold Coast Airport. The selection of the preferred option (known as Option C4) has a complex history dating back to 1997-1998 where three broad corridors were identified for road and rail, these being:

- ♦ **A** – upgrade of Gold Coast Highway
- ♦ **B** – partial bypass, behind Tugun Hill, then along the Gold Coast Highway
- ♦ **C** – full bypass west of the Gold Coast Airport

A review of options by an intergovernmental working party was undertaken in late 2002 and option C4 was identified as the preferred option, with B options selected as the next preferred (back up) options. The C4 option runs to the west of Tugun and the Gold Coast Airport and includes a tunnel beneath the obstacle limitation surface at the southern end of the runway. The C4 option was preferred as it:

- ♦ had significant social benefits, removed negative impacts from the communities of Tugun and Bilinga and improved levels of amenity and safety through the separation of local and interstate traffic;
- ♦ had the least impact on environmental values surrounding the Cobaki Broadwater, noting that all C options had the largest impact on the natural environment; and
- ♦ has a cost which is approximately equivalent to the median cost for B options but has the significant advantage in that it can be upgraded to accommodate six lanes in the future.

The Proposal has significantly higher levels of potential impact on the natural environment particularly in New South Wales when compared with options which would wholly or partially utilise the existing Gold Coast Highway. Primary among these are ecological impacts. While the route has been refined to avoid or minimise impacts on known areas of ecological importance, such as orchid habitat, Long-nose Potoroo habitat and Wallum Sedge Frog breeding ponds there are residual impacts including those associated with the removal of around 45 hectares of native vegetation communities and the expected edge effects on a further 26 hectares. The Proposal has sought to address these impacts through the development of a series of safeguards and mitigation measures and a compensatory habitat package.

The Q94 route that was identified in the early 1980s was considered deficient because it did not satisfy the requirements of the Proposal as it was inconsistent with a future rail corridor and did not meet current environmental assessment outcomes. Initial feasibility studies for a far western route were undertaken, but this route was not considered in the route selection study. Disadvantages identified for a far western route included significant cost (\$1 billion), relatively low patronage, significant engineering works, and resumption of up to 70 residences.

The economic assessment of the project indicates that the 'do-minimum' option of upgrading the Gold Coast Highway would be incremental and of reasonable cost, but would have limited life, with additional action (eg a bypass) required after 10-15. Benefits considered in the economic assessment include, travel time, operating cost, accident cost and road damage savings, with travel time savings creating the largest benefit. With a capital cost of \$360M, an annual maintenance cost of \$2M, and a discount rate of 6%, a cost-benefit ratio of 2.5 - 5.9 is achieved over a 15 to 30 year period. However, it should be noted that economic assessment of environmental and social changes brought about by the proposal was not undertaken as part of the economic assessment, although environmental costs of the proposal, to a degree form part of the environmental mitigation measures.

#### Comment

The Department notes that the proposed bypass has relatively pronounced potential ecological impacts that require careful management and mitigation responses. The Department notes that an alternative to the project may exist in the form of the B options, with the B3 and B4 options being the most feasible options. The B3 option involves a four lane bypass to the north of Boyd Street, and to the south the road would be in a separate corridor alongside the existing highway. The B4 option is similar to the B3 option, but includes a new corridor inside the airport boundary.

Although there is insufficient information in the EIS to carry out a qualitative assessment of these B options against the C4 option, they appear to generally meet the stated objectives for the proposal, but may not deliver the same potential as C4 with regard to route selection objectives, including the separation of interstate traffic from local and tourist trips, and being in a corridor not consistent with the future rail extension. Other potential issues include:

- ◆ reduced potential for public transport, pedestrian and cycle improvements within the Corridor;
- ◆ airport access and operations; and
- ◆ impacts on the Gold Coast Highway during construction.

#### Highway performance and increasing population and economic growth

Over the last 30 years there has been considerable urban development along the Gold Coast and in Tweed shire. This development has been accompanied by increased population densities and increased traffic demands, particularly during peak hours and school holiday periods.

The Gold Coast is an important employment centre in south-east Queensland and is expected to account for 121000 jobs by 2011, or 20% of the total expected employment growth in this area. A major

employment node on the Gold Coast is Coolangatta and the majority of employment growth in the region over next ten years is expected to be in Coolangatta and around Elanora (at either end of the proposed bypass).

Population density is currently greater along the coast and to the east of the proposed bypass, with growth expected further west around Robina and Currumbin Waters. Population growth between 2001 and 2011 (derived from the Census) for the southern Gold Coast region (Bilinga, Coolangatta, Currumbin, Currumbin Waters and Tugun) is forecast at 1.5% per annum from 22501 to 25300; for Tweed Shire growth is forecast at 2.3% per annum from 74,380 to 93,200. Population growth is expected to lead to a 60% increase in travel demand along the Gold Coast Highway at Tugun from the current average of 72,000 vehicles per weekday to 120,000 by 2017. As this growth will be limited in the vicinity of the proposed bypass vehicle growth will be focused on longer distance movements utilising the proposed bypass.

Indicators of traffic efficiency including intersection performance show a deteriorating situation. Modelling indicates that intersections within the Tugun area will be operating at Levels of Service (LoS) E to F by 2007. LoS E represents traffic volumes approaching road capacity with unstable flow (variable speeds) on occasion. LoS F represents the worst operating conditions (forced or break-down flow).

With a 4 lane bypass, as proposed, intersection performance at key interchange intersections would be operating at a LoS of A to E by 2017 and at a LoS of C to E in 2027, during peak periods. These levels are considered acceptable, however it should be noted that a four lane bypass could be approaching its capacity by 2027.

#### Comment

The Department notes that increased population and employment growth within south east Queensland and northern New South Wales has the potential to increase travel demand within the corridor adding to the deterioration of road performance along the Gold Coast Highway. The proposed bypass has the potential to accommodate this travel demand by providing additional capacity for interstate and freight traffic, therefore releasing capacity for local traffic. However, it is also noted that the corridor, with a four lane bypass would also be approaching its capacity by 2027. As such, the Department supports the advocated land use and transport initiatives that seek to reduce travel demand and improve mode share to public transport, cycling and walking.

#### **Integrated transport response and improved public transport, pedestrian and cycle facilities to counter traffic demand**

The proposed bypass would lead to a redistribution of traffic in the area that in the short term will reduce traffic on the Gold Coast Highway. The EIS suggests that this would provide an opportunity to improve public transport provision in the corridor by reallocating road space to public transport facilities such as bus priority measures and potentially light rail. It also provides greater potential for safe public bus set down/pick up areas along the Gold Coast Highway at Tugun. The EIS states that in the absence of a bypass, the Gold Coast Highway would need to be upgraded to six lanes, therefore limiting the opportunity for the preservation of a dedicated public transport corridor.

The proposed bypass shares part of the same transport corridor as the proposed Robina to Gold Coast Airport Rail extension, planned to occur over the next 15 years. Consequently the EIS has considered rail requirements for corridor protection purposes.

No arterial cycling connection is proposed along the bypass primarily because of narrow shoulders on the bypass along the tunnel and ramps and the exclusion of cycles on motorways in Queensland. However the EIS states that cycling conditions would improve by:

- ◆ reducing traffic volumes on the Gold Coast Highway and its service roads, hence reducing the level of interaction between cars and bicycles;
- ◆ increasing local accessibility for cyclists through an increase in green time allocated to traffic signal phases on side streets,
- ◆ allowing the Gold Coast Highway to return to its intra regional function and hence facilitating the reduction in the speed differential between cars and bicycles;
- ◆ removing the majority of heavy vehicles from the Gold Coast Highway;
- ◆ providing crossing facilities at Tugun Bypass interchanges.

At the Stewart Road interchange, a cycle link to the existing shared path adjacent to Pacific Motorway at Currumbin is proposed. At the Tweed Heads Bypass interchange, cycle access would be provided between the Gold Coast Highway cycleway and Tweed Heads West via the proposed eastern and western service roads. The EIS also identifies a number of proposed and potential future cycleways, which would enhance the cycle environment within the surrounding area, but which do not form part of the proposal.

The Gold Coast Highway creates a barrier to east west pedestrian movements. The proposed bypass would provide the following opportunities to improve walking conditions:

- ◆ a reduction in the traffic signal green time allocated to through-traffic movements and hence reduce delays at signalised pedestrian crossings on the Gold Coast Highway;
- ◆ the provision of new pedestrian crossings;
- ◆ removing the immediate need to upgrade the Gold Coast Highway to six lanes, ensuring that pedestrians only have four lanes of primary traffic to cross;
- ◆ potential reduction in traffic using the adjoining service roads, therefore improving pedestrian safety;
- ◆ provision of pedestrian footpaths on the bypass interchange bridges.

The proposal also provides the opportunity to formalise walking tracks within the vicinity of the bypass. The Proponent has committed to consultation with Gold Coast City Council regarding the location and safety of the proposed walking track within the road reserve linking Tugun Hill Conservation Park and Currumbin Waters via Hidden Valley.

#### Comment

The Department notes that the proposed bypass provides an opportunity to:

- ◆ support public transport provision on the Gold Coast Highway due to a redistribution of traffic, potentially allowing for the introduction of dedicated public transport facilities; and
- ◆ the preservation of a rail corridor to accommodate the proposed Robina to Gold Coast Airport Rail extension;

The proposed project would also delay the need to widen the existing Gold Coast Highway which would result in opportunities to improve bus facilities and implement bus priority measures (such as bus queue jumps). It is also noted that the widening of the Gold Coast Highway to six lanes would likely prohibit these opportunities and that some increase in vehicle trips is expected from the opening of the bypass, although these are difficult to quantify. If the advocated public transport initiatives are progressed then growth in vehicular traffic may be limited thus extending the life of the proposed bypass and delaying the need for future expansion of the Gold Coast Highway.

However, the Department is concerned on the emphasis that has been placed on secondary access related objectives and potential flow on benefits. The anticipated benefits in terms of improved public transport, pedestrian and cycling opportunities within the study area may not be achieved before the benefits of reduced traffic are diminished. This is because a substantial proportion of these initiatives are reliant on others (Queensland Government agencies and Gold Coast City Council) to implement.

### **Improvements to safety and amenity**

The Gold Coast Highway currently has a crash rate of approximately 0.227 crashes per million vehicle kilometres travelled, which is based on an average number of 31.8 crashes per year. The existing route also has a slightly higher injury rate than a standard 4 lane divided road, with the EIS suggesting that this is due to the consequences of high traffic volumes, uncontrolled access points and the difference in speed expectations between through and local traffic. There are also areas where pedestrian and cycle movements conflict with traffic on the highway. These cross movements are generally associated with trips between residential areas of Tugun to the west of the Gold Coast Highway and the shops and services to the east.

The expected crash rate for Tugun Bypass (based on RTA road stereotypes) is 0.133 crashes per million vehicle kilometres travelled. Additionally there is a forecast reduction in accidents and severity of rates with the current rate of accidents involving injury reducing from 20 per year to 14 per year in 2007, and 19 per year in 2017. The proposed bypass provides an opportunity to improve amenity and safety for pedestrians and cyclists between the Gold Coast and Tweed Heads through a reduction in traffic along the Gold Coast Highway,

Reductions in traffic volumes would result in lower traffic noise levels for residents and visitors adjacent the Gold Coast Highway, with reductions being in the order of 3 decibels, resulting in a noticeable improvement to the noise environment. It is also expected that the reduction in traffic volumes along the Gold Coast Highway corridor will provide an opportunity to downgrade the status of the road and to reallocate space from general traffic use to other purposes to improve the amenity for residents and visitors using the area.

#### **Comment**

The Department notes that the proposed bypass provides an opportunity to improve existing and safety and amenity levels along the Gold Coast Highway. In particular, the proposal separates conflicting local and through traffic through the provision of a high standard motorway consistent with the adjoining Tweed Bypass and Pacific Motorway.

### **3.1.3 Department's consideration**

The proposed bypass is considered to be consistent with the primary objectives of the project. It is also acknowledged that the proposed C4 bypass achieves the objectives relating to the route selection better than alternative B corridor options, and provides opportunities for improved access, safety and amenity outcomes. It is also noted that these corridor related outcomes generally favour the Queensland communities of Tugun and Bilinga.

The project offers considerable opportunity for improvements to public transport and local east-west accessibility along this corridor. The Department acknowledges that Queensland Main Roads is constrained in that it is only responsible for state controlled roads, while local roads and pedestrian and cycle facilities are generally the responsibility of other government agencies and the relevant Council. However, the Proponent has included a commitment to consult with relevant councils and state government agencies, with the intent of identifying opportunities relating to public transport, cycling and pedestrians.

## Conclusion

The project is largely a trade off between ecological impacts and social impacts. Even though it appears that the social aspect (both perceived social benefits of the project and the potential social impact of alternatives) appears to be overstated, the Department considers that, on balance, the proposed C4 route is acceptable:

The Department considers that the Tugun Bypass project, as described in the EIS (ie, the C4 route):

- ♦ can meet the stated project objectives;
- ♦ minimises environmental and social impacts as far as practicable;
- ♦ minimises ecological and cultural heritage impacts and provides a sound and well-defined compensatory habitat package for residual impacts (see Section X);
- ♦ supports significant social benefits, including enhanced public transport, cycle and pedestrian facilities, and improved safety and amenity levels; and
- ♦ would be acceptable, subject to the effective implementation of the Proponent's Statement of Commitments, and Conditions of Approval.

## 3.2 Ecological Impacts

### 3.2.1 Background

The Submissions Report summarises the ecological issues associated with the project:

*The study area for the Tugun Bypass contains a high number of flora and fauna species including many threatened species listed under State and Commonwealth legislation. Other notable values of the study area include a high diversity of vegetation communities and bird, amphibian and bat species, habitat for a number of threatened and protected flora and fauna species and the Cobaki Broadwater. The alignment of the Tugun Bypass has been developed to avoid ecologically sensitive areas including the Swamp Orchid habitat, the Long-nosed Potoroo habitat and the Wallum Sedge Frog breeding ponds. However, the Bypass would result in the removal of 45 hectares of native vegetation communities, and impact on the remaining areas by increasing edge effects, totalling 26 hectares. A compensatory habitat package has been developed, totalling 76 hectares with management measures to offset the residual impacts.*

Ecological surveys for the project identified 37 vegetation communities, 586 plant species, 12 fauna habitats and 247 terrestrial vertebrate fauna species consisting of 17 amphibian species, 20 reptile species, 179 bird species and 31 mammal species. A large number of threatened species are known from the vegetation and habitat located in the vicinity of the project. Because of the significance of the habitat, a Species Impact Statement (SIS) was required, which discussed the most environmentally significant plant and animal species, including:

- ♦ Chinese Burr (*Triumfetta rhomboidea*);
- ♦ Coast Palm Lily (*Cordyline congesta*);
- ♦ Little Wattle (*Acacia baueri* subsp *baueri*);
- ♦ Match Sticks (*Comesperma ericinum*);
- ♦ Stinking Cryptocarya (*Cryptocarya foetida*);
- ♦ Long-leaved Tuckeroo (*Cupaniopsis newmanii*);
- ♦ Black Walnut (*Endiandra globosa*);

- ◆ Fine-leaved Tuckeroo (*Lepiderma pulchella*);
- ◆ Swamp Orchid (*Phaius australis*);
- ◆ Bush Hen (*Amauronis olivaceus*);
- ◆ Masked Owl (*Tyto novaehollandiae*);
- ◆ Brahminy Kite (*Haliastur Indus*);
- ◆ Eastern Grass Owl (*Tyto capensis*);
- ◆ Lewings Rail (*Rallus pectoralis*);
- ◆ Eastern Long-eared Bat (*Nyctophilus bifax*);
- ◆ Grey-headed Flying Fox (*Pteropus poliocephalus*);
- ◆ Long-nosed Potoroo (*Potorous tridactylus*);
- ◆ Common Planigale (*Planigale maculate*);
- ◆ Wallum Froglet (*Crinia tinnula*);
- ◆ Wallum Sedge Frog (*Litoria olongburensis*);
- ◆ Swordgrass Brown Butterfly (*Tisiphone abeona morrissi*);
- ◆ Giant Dragonflies (*Petalura spp.*);
- ◆ Littoral Rainforest in the NSW North Coast Bioregion (endangered ecological community); and
- ◆ Saltmarsh in the NSW North Coast Bioregion (endangered ecological community).

An Addendum to the SIS assessed the impacts on three more endangered ecological communities, Swamp Oak Floodplain Forest in the NSW North Coast Bioregion, Swamp Sclerophyll Forest on Coastal Floodplains in the NSW North Coast Bioregion, and Freshwater Wetlands on Coastal Floodplains in the NSW North Coast Bioregion.

The majority of threatened or otherwise significant species would not be significantly affected by the project. However, a few species would potentially be significantly affected, including the Long-nosed Potoroo, Common Planigale, Wallum Froglet and Wallum Sedge Frog.

In concluding, the SIS noted that the project would traverse an area recognised for its high environmental value. The area has one of the highest levels of vertebrate and plant species biodiversity in Australia. The proposed bypass would result in vegetation/habitat loss and fragmentation of habitats. Longer term impacts are possible due to alterations to hydrological regimes.

The SIS and EIS propose a suite of mitigation measures to ensure that undesirable impacts are minimised and managed. These include physical provisions, such as fauna exclusion fencing and culverts, and management measures, such as clearing protocols and groundwater management. In addition, a compensatory habitat package was included as part of the proposal.

### 3.2.2 Key Issues

Ecological impacts were raised in over half (47) of submissions received in response to exhibition of the EIS and SIS. Additionally, the Department received more than 56 representations directly from the local community and environmental groups during the assessment process. A form letter comprised 32 of these representations. These representations objected to the proposal due to, among other issues, the potentially significant ecological impacts.

The key concerns noted in submissions were:

- ◆ the important biodiversity values of the region as a whole;
- ◆ the potential for the project to impact on specific adjoining areas, such as the Cobaki Broadwater and the Tweed Estuary Nature Reserve;

- ◆ direct impacts on vegetation and habitat for threatened species;
- ◆ direct impacts on endangered ecological communities;
- ◆ direct impacts on areas of high conservation value, such as Hidden Valley;
- ◆ direct impacts on a large number of threatened species;
- ◆ inadequacy of the proposed compensatory habitat package;
- ◆ loss of wildlife corridors; and
- ◆ construction impacts.

In response to the EIS and SIS, the Department of Planning stated that:

*Despite the “natural environment” being rated higher than all other issues except safety, the decision to select the C4 option makes a trade-off by accepting significant ecological impacts. The ecological impacts of the proposal are assessed in this context and, therefore, focus on the need for comprehensive and best practice mitigation. Of particular concern is the reliance on a sound yet unremarkable compensatory habitat package to justify “residual” impacts of the proposal. Additionally, compensatory habitat has yet to be finalised, including long-term management issues. Further consideration of opportunities for measures to assist the survival and recovery of the Long-nosed Potoroo, Common Planigale, Wallum Froglet and Wallum Sedge Frog are recommended.*

Other agencies, including the DEC, DNR and DPI (Fisheries) noted concerns with the potential and cumulative impact/s that the project may have on a number of threatened species and their habitats within the Tugun area. The DEC also requested clarification of the compensatory habitat package.

In response to the Submissions Report, the Department and DEC sought further clarification on the proposed Statement of Commitments. The Department and DEC recommended strengthening the proposed Statement of Commitments through the inclusion of more detail in flora and fauna management measures and setting realistic outcome-based objectives.

### **3.2.3 Department's Consideration**

The Tugun Bypass project would have potentially significant impacts on threatened species/endangered ecological communities, impacts on wetlands and general ecological impacts within NSW for a project designed to alleviate traffic impacts within Queensland.

Ecological impacts arise due to the high diversity of vegetation communities that provides habitat for flora, mammal, bird, amphibian and bat species, many of which are threatened within NSW. The proposed project also traverses the ecosystems adjacent to the Cobaki Broadwater. The alignment of the proposed project has been developed to avoid ecologically sensitive areas including Swamp Orchid habitat, Long-nosed Potoroo habitat and Wallum Sedge Frog breeding ponds. However, the proposed project would result in the removal of 45 hectares of native vegetation communities (19 hectares in NSW), and impact on the remaining areas by increasing edge effects, totalling 26 hectares. The vegetation outside of NSW provides important habitat for threatened flora and fauna and is significant in terms of population viability.

The preferred C4 route would involve potentially significant impacts to the natural ecology of areas in NSW (including impacts on Cobaki Broadwater). Overall, the project could be defined as a trade-off between reducing social environment impacts within Queensland with increasing natural environment impacts in NSW. The Department notes that other options exist east of the Airport (entirely in Queensland) that may have very lower natural environment impacts, but higher social impacts. Alternatives are discussed in Section 3.1.

### Impacts on threatened species

A number of threatened or significant species would be directly and/or indirectly affected by the proposed project. Of particular concern is the threatened flora within the footprint of the proposed project, including those listed in Table 3. Table 3 also identifies the key mitigation measures applicable to each species, which are strongly supported by the Department.

**Table 3: Threatened species affected by the proposed project and proposed mitigation measures.**

| Species              | Status*                                           | Impact                                                                                                                                  | Proposed mitigation measures                                                                   |
|----------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Chinese Burr         | Regionally significant                            | A large proportion of the existing Chinese Burr population would be removed with the remaining population being permanently fragmented. | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Coast Palm Lily      | Regionally significant                            | The removal of one individual of this species and a small amount of habitat in Queensland.                                              | Clearing protocols<br>Possible translocation                                                   |
| Little Wattle        | NCR (V);<br>ROTAP                                 | The removal of some individuals and their habitat.                                                                                      | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Match Sticks         | Regionally significant                            | The removal of some individuals of this species and up to 45% of habitat in Queensland.                                                 | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Stinking Cryptocarya | <b>TSC (V);</b><br>NCR (V);<br>EPBC (V);<br>ROTAP | The removal of two individuals and a small amount of habitat for this species.                                                          | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Long-leaved Tuckeroo | NCR (R);<br>ROTAP                                 | The removal of one individual and a small amount of habitat for this species.                                                           | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Black Walnut         | NCR (R);<br>ROTAP                                 | The removal of one individual and a small amount of habitat for this species.                                                           | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Fine-leaved Tuckeroo | NCR (R);<br><b>TSC (V);</b><br>ROTAP              | The removal of one individual and a small amount of habitat for this species.                                                           | Clearing protocols<br>Possible translocation<br>Species incorporated into rehabilitation plans |
| Swamp Orchid         | <b>TSC (E);</b><br>NCR (E);<br>EPBC (E);<br>ROTAP | Proposal located in vicinity of significant population.                                                                                 | Project alignment altered to avoid known population.                                           |
| Bush Hen             | <b>TSC (V)</b>                                    | The removal of a small amount of habitat in Queensland and the possible disturbance of breeding habitat in Hidden Valley.               | Clearing protocols<br>Fauna exclusion fencing                                                  |
| Masked Owl           | <b>TSC (V)</b>                                    | The Bypass would increase the risk of road mortality for Individuals.                                                                   | Clearing protocols<br>Relocation of hollows                                                    |
| Brahminy Kite        | Regionally Significant                            | The removal of at least one nest site, active at the time of the survey, from the southern end of the study area would be required.     | Clearing protocols                                                                             |
| Eastern Grass Owl    | <b>TSC (V)</b>                                    | The removal of some habitat and the partial fragmentation of remaining habitat for this species.                                        | Clearing protocols<br>Relocation of hollows                                                    |

| Species                                                                          | Status*                                                                         | Impact                                                                                                                                                                                                                                                                                                                 | Proposed mitigation measures                                                                                                |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Lewings Rail                                                                     | NCR (R)                                                                         | May result in the removal of some marginal habitat and have some barrier effects.                                                                                                                                                                                                                                      | Clearing protocols                                                                                                          |
| Eastern Long-eared Bat                                                           | <b>TSC (V)</b>                                                                  | Approximately 1.5ha of habitat potentially used for roosting would be removed from the study area in NSW.                                                                                                                                                                                                              | Clearing protocols<br>Relocation of hollows                                                                                 |
| Grey-headed Flying Fox                                                           | <b>TSC (V); EPBC (V)</b>                                                        | The removal of a small amount of roosting and foraging habitat.                                                                                                                                                                                                                                                        | Clearing protocols                                                                                                          |
| Long-nosed Potoroo                                                               | <b>TSC (V); NCR (V); EPBC (V);</b><br>Local population listed as <b>TSC (E)</b> | The removal of approximately 0.5ha along the eastern edge of known habitat with a larger area potentially being modified through edge effects and pollution.                                                                                                                                                           | Clearing protocols<br>Fauna exclusion fencing<br>Long-nosed Potoroo Management Plan<br>Revegetation                         |
| Common Planigale                                                                 | <b>TSC (V)</b>                                                                  | The fragmentation and removal of a large proportion of the existing main population on Commonwealth land to such an extent that it is likely to become extinct. While, the other population on Commonwealth land and in Queensland would be unaffected by the Proposal, their long-term survival potential is unknown. | Clearing protocols<br>Translocation<br>Fauna exclusion fencing<br>Underpass structures<br>Revegetation                      |
| Wallum Froglet                                                                   | <b>TSC (V); NCR (V)</b>                                                         | The loss of individuals and the loss and fragmentation of known and potential habitat in NSW. There is potential for gene flow to cease and the two separated populations would diverge genetically.                                                                                                                   | Clearing protocols<br>Construction timing<br>Culverts for fauna movement<br>Frog exclusion fencing                          |
| Wallum Sedge Frog                                                                | <b>TSC (V); NCR (V); EPBC (V)</b>                                               | The removal of one subpopulation of Wallum Sedge Frog and fragmentation of the meta-population which may result in this population becoming extinct                                                                                                                                                                    | Clearing protocols<br>Artificial frog ponds<br>Construction timing<br>Culverts for fauna movement<br>Frog exclusion fencing |
| Swordgrass Brown Butterfly                                                       | Regionally Significant                                                          | The removal of some habitat for this subspecies.                                                                                                                                                                                                                                                                       | Clearing protocols                                                                                                          |
| Giant Dragonflies                                                                | Regionally Significant                                                          | May result in direct or indirect impacts to habitat for these species.                                                                                                                                                                                                                                                 | Clearing protocols                                                                                                          |
| Littoral Rainforest in the NSW North Coast Bioregion                             | <b>TSC (E)</b>                                                                  | The removal or disturbance to about 0.6ha of Littoral Rainforest habitat in Queensland.                                                                                                                                                                                                                                | Clearing protocols                                                                                                          |
| Saltmarsh in the NSW North Coast Bioregion                                       | <b>TSC (E)</b>                                                                  | The removal of approximately 0.57ha of this community with possible secondary impacts.                                                                                                                                                                                                                                 | Clearing protocols                                                                                                          |
| Swamp Oak Flood Plain Forest in the NSW North Coast Bioregion                    | <b>TSC (E)</b>                                                                  | The removal of approximately 1.5ha of this community. This loss would occur in all jurisdictions, with about 0.9ha affected in NSW (including Airport land).                                                                                                                                                           | Clearing protocols                                                                                                          |
| Swamp Sclerophyll Forest on Coastal Floodplains in the NSW North Coast Bioregion | <b>TSC (E)</b>                                                                  | The removal of approximately 19.6ha of this community which would mostly occur in NSW.                                                                                                                                                                                                                                 | Clearing protocols                                                                                                          |
| Freshwater Wetlands on Coastal Floodplains in the NSW North Coast Bioregion      | <b>TSC (E)</b>                                                                  | The removal of approximately 1.8ha of this community which would occur in NSW (including Airport land).                                                                                                                                                                                                                | Clearing protocols                                                                                                          |

\* Note: NCR – Queensland Nature Conservation (Wildlife) Regulation 1994  
TSC – NSW Threatened Species Conservation Act 1995

EPBC – Commonwealth Environment Protection and Biodiversity Conservation Act 1999  
 ROTAP – Rare or Threatened Australian Plants  
 E – Endangered  
 V – Vulnerable  
 R – Rare

Further consideration of opportunities for measures to assist the survival and recovery of the Long-nosed Potoroo, Common Planigale, Wallum Froglet and Wallum Sedge Frog are recommended. Despite the mitigating and compensatory measures associated with the proposed project, there is still a risk that the small disjunct populations of these species may become extinct as a result of cumulative impacts.

The Department recognises that the Proponent's Statement of Commitments would minimise risks to threatened species through a range of design and compensatory measures, including:

- ♦ construction of 3 frog ponds for acid frogs (Wallum Sedge Frog and Wallum Froglet) to be undertaken in consultation with frog specialists (SoC No. 11);
- ♦ a Plan of Management for the Long-nosed Potoroo (SoC No. 12);
- ♦ fauna underpasses and provision of additional habitat suitable for the Common Planigale in the proposed compensatory habitat package (SoC No. 13);
- ♦ a plan of management for the Grey Headed Flying Fox (SoC No. 14); and
- ♦ a plan of management for threatened bird species (SoC No. 15).

The Plan of Management for the Long-nosed Potoroo would be focused on alleviating the barrier effects of Boyd Street on the Long-nosed Potoroo. Discussions have been held with Leda Manorstead Pty Ltd and Tweed Shire Council in the attempt to ameliorate these impacts and in a manner appropriate to all parties. The Proponent has agreed to develop an integrated plan of management for the potoroo that addresses the impact of each party's development. This would include a design review of fauna underpasses (at and below grade) proposed within the Boyd Street extension and their timing for implementation. This measure is detailed within the Tugun Bypass compensatory habitat package (SoC No. 17) and proposed as part of a Plan of Management for the potoroo.

#### Project design to reduce impacts

Modifications to the project design that reduce the ecological impacts are supported. Importantly, the project alignment has been developed to avoid ecologically sensitive areas including the Swamp Orchid habitat, the Long-nosed Potoroo habitat and the Wallum Sedge Frog breeding ponds. The project also incorporates the following design-related mitigation measures:

- ♦ fauna underpasses, including two culverts designed to maintain connectivity between areas of frog habitat and modification of culverts to act as underpass structure/s for the Common Phanigale (SoC No.s 11 and 13);
- ♦ fauna exclusion fencing, including frog exclusion fencing to keep frogs off the road and direct them into the culverts (SoC No.s 9, 11 and 12);
- ♦ three new artificial frog ponds and enhancement of the existing frog pond to the west of the alignment (SoC No. 11);
- ♦ waterway crossings would be designed to enhance light penetration (SoC No. 10);
- ♦ rehabilitation of cleared areas within the road reserve to improve a fauna corridor (SoC No.s 3 and 10);
- ♦ measures to reduce the risk of bird strike (SoC No. 16);

- ◆ management of groundwater to ensure changes to groundwater dependant ecosystems are not compromised (SoC No. 18); and
- ◆ a compensatory habitat package, which is described further below (SoC No. 17).

These mitigation measures are detailed within the Proponent's Statement of Commitments. Considerable consultation with government agencies during the environmental assessment process, such as the Department of Planning, Department of Environment and Conservation, Department of Natural Resources, Department of Primary Industries (Fisheries), Queensland Environmental Protection Agency and Department of Environment and Heritage (Commonwealth). These discussions, which included site visits and review of additional information, have resulted in positive design modifications to the project and a reduction in the ecological risks that would be associated with construction and operation of the project.

#### Mitigation measures during construction

The Proponent's Statement of Commitments includes measures to be undertaken during construction that would ensure impacts are avoided, minimised or managed, including:

- ◆ flora and fauna management strategies and clearing protocols (SoC No. 7) that would include minimising the construction footprint, seed collection, stockpiling of top soil, flagging significant areas of vegetation/habitat, salvage of habitat resources, survey for significant species, possible translocation of flora (SoC No. 8) and a fauna rescue framework (SoC No. 9);
- ◆ replacement of large/medium hollows (SoC No. 7);
- ◆ an incrementally launched bridge structure over Hidden Valley to minimise disturbance;
- ◆ revegetation of disturbed areas after construction (SoC No.s 3 and 10); and
- ◆ sediment and erosion controls and management of acid sulfate soils (SoC No.s 19 and 22).

#### Compensatory habitat package

The initial compensatory habitat package proposed in the EIS and SIS was not considered adequate by the Department or the DEC. Therefore, the Proponents revised the package. Additional management measures (and land) have since been identified and aim to improve the conservation value of the compensatory land proposed or ameliorate cumulative impacts of surrounding development.

Appendix H of the Submissions Report describes the final compensatory habitat package (SoC No. 17). Four parcels of land are now proposed with a combined area of 82.3 hectares. Inclusive of edge effects, this exceeds direct impacts of the road footprint and edge effect allowance by approximately 11 hectares. The package is also 7 hectares larger than the original package publicly displayed in December 2004. In NSW, the direct disturbance of 19 hectares would be offset by approximately 80 hectares within NSW. This area would be integrated with the existing conservation reserve system in NSW, including the Cobaki Broadwater and Cudgen Nature Reserve.

The Department recognises that the land package represents a significant area within a highly developed, coastal region. The land consolidates an environmental buffer around the Cobaki Broadwater and is recognised as supporting flora and fauna of international, national, state or regional significance. One area is significant in terms of infilling and adjoining areas of the Cudgen Nature Reserve, whilst another area is a small but significant area of habitat for the Long-nosed Potoroo. Table 4 summarises the land package and management strategies.

**Table 4: Compensatory habitat land, management measures and security.**

| <b>Land</b>               | <b>Management measures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Security</b>                                                                                               |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Block A/E<br>~70 hectares | <ul style="list-style-type: none"> <li>◆ Develop Plan of Management,</li> <li>◆ Upgrading of perimeter fencing and Anconia Drive access at Block E,</li> <li>◆ Implementation of erosion controls within areas at risk,</li> <li>◆ Removal of stock,</li> <li>◆ Intensive weed eradication of areas,</li> <li>◆ Burning of sclerophyll vegetation to promote seed germination,</li> <li>◆ Broad-scale restoration planting of cleared areas with endemic species,</li> <li>◆ Continuation of feral animal control,</li> <li>◆ Removal of chain mesh fencing from between Blocks A / E,</li> <li>◆ Removal of fencing between the north western boundary of Block A and the adjoining parcel of Crown Land,</li> <li>◆ Installation of medium to large hollows, nest or roost boxes,</li> <li>◆ Assignment of an onsite caretaker.</li> </ul> | Located in NSW. Simple land transfer to the Department of Environment and Conservation                        |
| Block F<br>~11 hectares   | <ul style="list-style-type: none"> <li>◆ Integration within Cudgen Nature Reserve Plan of Management</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Located in NSW. Simple land transfer to the Department of Environment and Conservation                        |
| Block P<br>~1 hectare     | <ul style="list-style-type: none"> <li>◆ Management of declared pests, as applicable,</li> <li>◆ Perimeter fencing at embankment toe of Tugun Bypass,</li> <li>◆ Mosaic patch burns in accordance with the Potoroo Management Plan</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Located in Queensland. Retention by QDMR and declared as a 'Significant Environmental Area' under QDMR Policy |

On balance, the proposed components of the compensatory habitat package offer a biodiversity offset that aims to provide a medium- to long-term net biodiversity benefit. The proposed project includes a number of translocation and revegetation strategies on land adjacent to the disturbance area. The Department notes that the success of translocation and revegetation would be moderately risky. However, with adequate resources, selective planting would result in long-term biodiversity benefits.

Four conservation areas would be established immediately as part of the project (Table 4). These areas comprise a variety of vegetation communities, including the vegetation communities that would be directly affected by the project. Enhancement of these areas would be the subject of a management plan detailing land management practices, weed control and selective planting.

The proposed compensatory habitat package meets the Department's criteria for the assessment of biodiversity offsets as shown in Table 5.

**Table 5: Criteria to assess the adequacy of the proposed compensatory habitat package.**

| Assessment Criteria           | Application to proposal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alternatives considered       | <p>In order of preference, environmental impacts should be avoided, unavoidable impacts mitigated, and only then, consideration given to providing an offset area to compensate for the loss of biodiversity values associated with a proposed project.</p> <p>The Department notes that the alignment was revised to reduce impacts on extant vegetation and significant flora and fauna species.</p> <p>Justification and alternatives to the proposal are discussed in Section 3.1.</p>                                                                                                                                         |
| Net environmental improvement | The disturbance of approximately 70 hectares (including edge effects) of significant vegetation/habitat is proposed to be offset by the immediate protection of approximately 82 hectares. Importantly, the compensatory habitat areas comprise similar vegetation communities, including the protection of endangered ecological communities that would be lost.                                                                                                                                                                                                                                                                  |
| Staging of offset             | The proposed compensatory habitat package would be implemented immediately. The Department considers that the proposed compensatory habitat package would provide benefits prior to impacts occurring.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Identification of impacts     | The Department considers that the impacts of the proposal have been adequately described. Direct impacts relate to the removal of vegetation that is locally and regionally significant and is utilised by a number of threatened fauna species.                                                                                                                                                                                                                                                                                                                                                                                   |
| Regional context of impacts   | The proposed compensatory habitat package has been developed with consideration of the adjacent conservation areas, Cobaki Broadwater and Cudgen Nature Reserve. The ability to create buffers and vegetation corridors between these areas has been considered in the compensatory habitat package. The Department considers that the proposed compensatory habitat package would offer strategic benefits in terms of regional vegetation corridors and conservation of vegetation communities and habitat.                                                                                                                      |
| Level of protection of offset | <p>Management of the proposed compensatory habitat package would be required to retain or improve their conservation value in the long term. As transport infrastructure agencies, both the Department of Main Roads and the Roads and Traffic Authority lack the skills or funding to manage significant conservation areas. It is therefore proposed that the large parcels of land (Blocks A, E and F) be transferred to the Department of Environment and Conservation following project approval.</p> <p>The Department supports this arrangement that would offer formal protection of land identified for conservation.</p> |
| Completion criteria           | The proposal includes a monitoring and management program that would ensure offset areas are managed to achieve conservation outcomes. Corrective action would be undertaken where the desired performance criteria have not been achieved. Protocols and performance criteria are outlined in Appendix H of the Submissions Report. This approach is supported by the Department.                                                                                                                                                                                                                                                 |

## Conclusion

The proposed Tugun Bypass would have potentially significant ecological impacts within NSW. However, the project has been designed to minimise impacts via altering the alignment, reducing the project footprint and providing structures for fauna movement. Importantly, translocation, revegetation and compensatory habitat are proposed as key components of the project.

The Department considers that the final proposed compensatory habitat package represents a well-defined and complete offset that is commensurate with the impacts of the project. The proposed conservation areas, supported by the management strategies, would provide a medium- to long-term net biodiversity benefit in the locality. Particularly important would be the buffer around the Cobaki Broadwater and protection of significant habitat for the Long-nosed Potoroo.

## **3.3 Cultural Heritage**

### **3.3.1 Background**

The EIS undertook a cultural heritage assessment for the proposed Tugun Bypass project. A number of known archaeological sites adjacent to the proposed project were identified from literature reviews, a search of relevant cultural heritage site registers and databases, consultation with Traditional Owners and Aboriginal groups and field surveys.

The EIS notes that the study area has experienced a high degree of disturbance and a number of items have been destroyed by previous construction activities.

Important indigenous relics and artefacts are located within an area of National Estate area, west of the proposed alignment. A midden complex within the area is of significant cultural heritage and maintains much of its former environmental context. The proposed alignment would intrude into a section of the National Estate boundary, however this would be within a previously disturbed area, and no other known sites of cultural significance would be disturbed in the area.

No evidence of burial sites within the alignment was found during the any of the cultural heritage surveys, however their presence was not discounted in the EIS. The likelihood of burials occurring in the study area is also reported in the EIS as a low risk. Notwithstanding, it is proposed to undertake subsurface testing prior to the start of any ground clearance. Within NSW, two zones (6 and 13) would require subsurface testing.

### **3.3.2 Key Issues**

The important archaeological and heritage values within the study area were noted in numerous submissions. The potential impacts of the proposed project on archaeological and heritage values were raised in 36 submissions, many of which objected to the proposal. Specific issues included:

- ♦ lack of detailed assessment;
- ♦ potential for burial sites to be discovered and impacted;
- ♦ impacts on the National Estate; and
- ♦ lack of detailed planning for mitigation and management of archaeological and heritage values prior to and during construction.

In response to the Submissions Report, DEC noted further issues of concern, including potential impacts on a men's dancing ground, clarification on the proposed Indigenous Historical Study and methodology for subsurface investigations. The DEC provided recommendations to be incorporated in the proposed Cultural Heritage Management Plan.

### **3.3.3 Department's Consideration**

#### Additional assessment

The Preliminary Cultural Heritage Survey provided in the Submissions Report includes detailed methodologies for site survey along the length of the proposed project. Based on preliminary site inspections with Traditional Owners and archaeologists, thirteen zones were identified with varying potential to yield cultural heritage material as described in Table 6.

Table 6: Cultural heritage zones along the proposed project.

| Zone                                                     | Issues                                                                                                                                                                                   | Archaeological survey requirements                                                             | Actions                                                                                                                                                                                           |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Stewart Rd to Quarry (Qld)                            | Isolated artefact finds. Zone has potential to yield further cultural material.                                                                                                          | One 10m by 10m square                                                                          | Retain artefacts <i>insitu</i> or returned to site as practical. Following vegetation removal, zone would be intermittently cut and filled.                                                       |
| 2. Quarry (Qld)                                          | Extensively cleared                                                                                                                                                                      | No further investigation                                                                       |                                                                                                                                                                                                   |
| 3. Hidden Valley (Qld)                                   | Highly unlikely that cultural material would be uncovered from this zone                                                                                                                 | No further investigation                                                                       | Traditional Owner representative invited on site during clearing.                                                                                                                                 |
| 4. Kitchener Rd to beginning of flats (Qld)              | Isolated artefact finds. Zone has potential to yield further cultural material.                                                                                                          | One 10m by 10m square. Traditional Owners undertake a brief search beyond the excavation area. | Retain artefacts <i>insitu</i> or returned to site as practical. Following vegetation removal, zone would be filled.                                                                              |
| 5. Flats to border (Qld)                                 | Aboriginal burials may be present in this area                                                                                                                                           | Two 10m by 10m squares.                                                                        | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of burials. Following vegetation removal, zone would be filled.                                                  |
| 6. Border to GCAL boundary (NSW)                         | Aboriginal burials may be present in this area. Zones 6 and 7 are particularly sensitive.                                                                                                | Two 10m by 10m squares.                                                                        | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of burials. Following vegetation removal, zone would be filled.                                                  |
| 7. GCAL boundary to access road (Commonwealth land)      | Aboriginal burials may be present in this area. Zones 6 and 7 are particularly sensitive.                                                                                                | Two 10m by 10m squares.                                                                        | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of burials. Following vegetation removal, zone would be filled.                                                  |
| 8. Helicopter landing area (Commonwealth land)           | Isolated artefact finds, possibly part of larger site.                                                                                                                                   | One 10m by 10m square.                                                                         | Retain artefacts <i>insitu</i> or returned to site as practical. Following vegetation removal, zone would be filled.                                                                              |
| 9. Small patch of remnant vegetation (Commonwealth land) | Large number of artefact finds, possibly part of larger site. Adjacent to National Estate. Burials known from other locations with same soil type.                                       | Two trenches (80cm by 1m)                                                                      | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of middens or burials. Following vegetation removal, zone would be filled.                                       |
| 10. Remnant vegetation to forest (Commonwealth land)     | Isolated artefact finds, possibly part of larger site. Adjacent to National Estate. Burials known from other locations with same soil type.                                              | One 10m by 10m square.                                                                         | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of middens or burials. Following vegetation removal, zone would be filled.                                       |
| 11. Forest area (Commonwealth land)                      | No artefact finds, but zone retains a high level of integrity that may result in cultural material occurring <i>insitu</i> . Burials known from other locations with same soil type.     | Two 10m by 10m squares.                                                                        | Retain artefacts <i>insitu</i> or returned to site as practical. Assess evidence of middens or burials. Following vegetation removal, zone would be filled.                                       |
| 12. Forest to GCAL boundary (Commonwealth land)          | No artefact finds, but zone retains a high level of integrity that may result in cultural material occurring <i>insitu</i> . Burials known from other locations with same soil type.     | Two 10m by 10m squares.                                                                        | Artefacts returned to site as practical. Assess evidence of middens or burials. Tunnel construction would result in removal of a large volume of spoil and no sub-surface integrity would remain. |
| 13. GCAL boundary to Kennedy Drive (NSW)                 | Scatter of human ashes (contemporary find). No artefact finds, but zone retains some areas with a high level of integrity that may result in cultural material occurring <i>insitu</i> . | Two 10m by 10m squares.                                                                        | Retain artefacts <i>insitu</i> or returned to site as practical. Following vegetation removal, zone would be filled.                                                                              |

It can be seen from Table 6 that, during the initial stages of construction, there would be potential for new cultural material to be discovered, particularly isolated artefacts or material as part of a larger midden site. There is also the potential to discover burial sites within some zones. For each zone the above methodology, which is described further in the Appendix C of the Submissions Report and has been noted by the local Traditional Owner community, would identify and assess all cultural heritage finds. Artefacts would remain *insitu* where practicable, or be returned to the area in consultation with the local Traditional Owner community.

The Department notes that, in zones 4 to 11 and zone 13, construction would involve clearing of vegetation and disturbance of the ground surface to a depth of around one metre. These zones would then be filled to create a flat, stable surface for the road. Any cultural material beneath the construction impact would retain integrity beneath the road surface.

### Potential burial sites

Whilst the EIS indicates that the likelihood of burial sites occurring within the proposed construction footprint would be low, significant community concern has been expressed with regards to the potential discovery of a burial site or other significant remains.

The proposed Cultural Heritage Management Plan (SoC No. 23) would contain specific procedures for responding to the discovery of burial sites, including stop-work provisions, consultation procedures and notification of Traditional Owners and government authorities.

### National Estate

The Submissions Report notes that an area of 1200m<sup>2</sup> of the National Estate (zones 9 and 10 on Commonwealth land) would be affected by the proposed project. This is within an area that was previously disturbed and would not affect the known shell midden complex within the fenced vegetated area. The Department considers that pre-construction and construction management measures developed as part of the Cultural Heritage Management Plan would note the importance of this area and include stop work provisions should unknown intact midden deposit or other finds that are significant to the Aboriginal community be uncovered.

### Men's dancing ground

The Department sought clarification regarding the men's dancing ground located in the Cobaki area. The DEC confirmed that the proposed alignment would not impact directly on this area. Notwithstanding, during construction consultation would occur with Traditional Owners on this issue as part of the Cultural Heritage Management Plan. Additionally, further investigation of the Men's dancing ground would occur as part of this proposed Indigenous Historical Study.

### Indigenous Historical Study

The Department supports the development of an Indigenous Historical Study that would gather a broad range of information for the community members about their knowledge of, and connection to the Cobaki area in general. Whilst the proposed project would provide a focal point for the study area, the study would extend to the broader area bounded by Tallebudgera Creek to the north, Tweed River to the south, Darling Range to the west and the beach to the east. The Department considers that the

study would offer an important contribution to cultural knowledge in the area for the indigenous and non-indigenous community. The study would be initiated concurrently with construction of the proposed project.

#### Mitigation and management prior to and during construction

The Statement of Commitments (SoC No. 23) describes the development of a Cultural Heritage Management Plan (CHMP) to define pre-construction and construction management measures and the roles of stakeholders, including Traditional Owners, the Queensland Department of Natural Resources and Mines and NSW Department of Environment and Conservation. The Department concurs that the CHMP should be developed in accordance with the Queensland *Aboriginal Cultural Heritage Act 2003* and the NSW *National Parks and Wildlife Act 1974* (and NSW Department of Environment and Conservation's Interim Community Consultation Requirements for Applicants).

The Department notes that the Proponent has already initiated consultation with a number of community groups. The Kombumerri Aboriginal Corporation for Culture, Ngarang-Wal Gold Coast Aboriginal Association, Ngarakwal/Ngandowal representatives and individual community members have participated in the development of the CHMP. The Eastern Yugambah Limited and Tweed/Byron Local Aboriginal Land Council have attended meetings, but have yet to contribute to the CHMP.

#### Conclusion

The Department acknowledges the high cultural and social significance of the area that the proposed project would traverse.

A number of known archaeological sites occur adjacent to the proposed project. During the initial stages of construction, there would be potential for new cultural material to be discovered, particularly isolated artefacts or material as part of a larger midden site. There is also the (low) potential to discover burial sites within some areas, particularly near the Queensland border (within NSW and Commonwealth land). However, for much of the route, with the exception of the tunnel, construction would result in relatively limited ground disturbance. Therefore, material below the new road surface would maintain integrity. Where artefacts are discovered and can be salvaged, they would be left *in situ* if practicable or be returned on-site. Ongoing monitoring and consultation with Traditional Owners would occur throughout the construction period.

Should evidence of significant cultural heritage material be found during archaeological survey, all work in likely to affect the find would cease and procedures would be implemented to assess the find.

Provided that the proposed Cultural Heritage Management Plan, as proposed in the Statement of Commitments (SoC No. 23), is implemented effectively and in consultation with local stakeholders, the Department considers that the cultural heritage impacts and risks could be managed to an acceptable level.

## 3.4 Mitigation Strategies and Environmental Management

### 3.4.1 Background

In accordance with section 75F(6) of the EP&A Act, the Proponent prepared a Statement of Commitments that was included in the Proponent's Submissions Report.

Mitigation measures identified in the EIS and SIS were included in the Statement of Commitments and revised if necessary in response to submissions or additional information.

The Submissions Report and Statement of Commitments was forwarded to other agencies (DEC, DPI (Fisheries), DNR and DEH) for advice.

### 3.4.2 Key Issues

Whilst the Statement of Commitments describes a comprehensive set of proposed mitigation measures, the Department and other agencies identified a number of issues that were not included in the Statement of Commitments. Specifically, the Commitments did not comprehensively reflect the mitigation measures described in the EIS, SIS and Submissions Report, including:

- ◆ various flora and fauna mitigation measures from the SIS;
- ◆ opportunities to improve pedestrian crossing of Gold Coast Highway;
- ◆ connections to existing cycle routes;
- ◆ the proposed walking track as described in Appendix O of the Submissions Report;
- ◆ investigation of public transport improvements along the Gold Coast Highway;
- ◆ processes for out of hours construction; and
- ◆ risk assessment and emergency response planning.

Use of the Department's Standard Conditions is supported. However the Department queried the failure to apply a number of important conditions, particularly to do with construction management, environmental auditing, community involvement, noise management, green energy, property damage and operational environmental management.

### 3.4.3 Department's Consideration

In response to concerns raised by the Department and other agencies, the Proponents revised the Statement of Commitments. A copy of the revised Statement of Commitments is included in the attached instrument of approval.

The revised Statement of Commitments describes detailed mitigation strategies for environmental management, including:

- ◆ SoC No. 1: General: refers to relevant documentation, the EIS, SIS, SIS Addendum and Submissions Report;
- ◆ SoC No. 2: Documentation: establishes the need for Construction and Operational Environmental Management Plans;
- ◆ SoC No. 3: Landscape: identifies landscape and vegetation requirements that balance aesthetics, safety and the natural environment;

- ◆ SoC No. 4: Air Quality: identifies strategies to minimise impacts on the ambient air quality surrounding the proposed project during construction and operation;
- ◆ SoC No. 5: Contaminated Land: describes remediation or management strategies required for areas of contamination within the project corridor;
- ◆ SoC No. 6: Noise and Vibration: identifies strategies to minimise noise and vibration impacts as a result of the proposed project during construction and operation;
- ◆ SoC No. 7: Clearing of native vegetation: establishes the need for a Flora and Fauna Management Plan that addresses vegetation protection issues;
- ◆ SoC No. 8: Relocation of threatened plant species: identifies a strategy for the translocation of threatened plants;
- ◆ SoC No. 9: Relocation of animal species: identifies a relocation strategy is incorporated within the Flora and Fauna Management Plan to prevent unnecessary harm to animals within the project corridor during construction and operation;
- ◆ SoC No. 10: Fauna Habitat: identifies a strategy to maintain fauna habitat values within the project corridor and provide suitable offset measures where residual impacts are indicated;
- ◆ SoC No. 11: Wallum Sedge Frogs: identifies strategies to minimise and offset residual impacts from the project on the local population of Wallum Sedge Frog, including frog fencing, a hygiene protocol, purpose built artificial frog ponds and culverts designed for frog movement;
- ◆ SoC No. 12: Long-nosed Potoroos: identifies measures to minimise impacts on the Long-nosed Potoroo, including protection of habitat in offsets, fox control, fauna exclusion fencing, and fire management;
- ◆ SoC No. 13: Common Planigale: identifies measures to minimise impacts on the Common Planigale, including protection of habitat in offsets and design of underpass structures;
- ◆ SoC No. 14: Grey-headed Flying Fox: identifies measures to minimise impacts on the Grey-headed Flying Fox, particularly roost sites;
- ◆ SoC No. 15: Threatened Bird Species: identifies measures to minimise impacts on threatened bird species, particularly the Brahminy Kite nest sites, Bush Hen breeding sites and Eastern Grass Owl breeding habitat
- ◆ SoC No. 16: Bird Strike: identifies strategies to reduce the risk of bird strike within the Gold Coast Airport;
- ◆ SoC No. 17: Compensatory Habitat: ensures that the package of compensatory measures described within the Submissions Report (Appendix H) would be implemented;
- ◆ SoC No. 18: Groundwater: identifies strategies to manage groundwater during construction and maintain the natural groundwater flow, height and quality during road operation;
- ◆ SoC No. 19: Soils and Water: identifies strategies to minimise erosion and sedimentation during construction and operation;
- ◆ SoC No. 20: Topsoil: identifies strategies to effectively manage topsoil stripped and / or used during the construction;
- ◆ SoC No. 21: Water Quality: identifies strategies to maintain the natural quality of surface waters which pass through the project corridor;
- ◆ SoC No. 22: Acid Sulfate Soils: ensures that acid sulfate materials are managed through the implementation of an Acid Sulfate Soils Management Plan;
- ◆ SoC No. 23: Cultural Heritage: establishes the need for a Cultural Heritage Management Plan to manage concerns of Cultural Heritage resulting from construction;
- ◆ SoC No. 24: Waste Management: identifies strategies to effectively manage any waste generated as a result of construction;
- ◆ SoC No. 25: Traffic and Access: identifies strategies for traffic management during construction and provides an undertaking for review of pedestrian access, cycleways and public transport opportunities;

- ◆ SoC No. 27: Public Transport, Cycleway and Pedestrians: identifies consultation requirements to ensure that opportunities to improve cycle ways, pedestrian access and public transport would be considered further;
- ◆ SoC No. 27: Hazard and Risk: establishes the need for a Hazard and Risk Management Plan, which would include an Emergency Response Plan, detailing safe working practices for construction workers and the strategies for the operation of the project; and
- ◆ SoC No. 28: Construction Facilities: sets specific requirements for ancillary facilities required for construction to minimise environmental impacts.

Overall, the proposed project could be approved subject to the effective implementation of the Proponent's Statement of Commitments. To ensure appropriate environmental outcomes are achieved, the Department has recommended a number of strategically-focused Conditions of Approval that establish rigorous environmental management and auditing processes to ensure that the Statement of Commitments are implemented effectively. The recommended Conditions of Approval identify:

- ◆ Conditions of Approval Nos 1 to 11. These cover administrative, compliance and auditing requirements;
- ◆ Condition of Approval No 12 specifies the requirements of a Construction Environmental Management Plan;
- ◆ Condition of Approval No 13 specifies the requirements of an Operational Environmental Management Plan;
- ◆ Conditions of Approval Nos 14 to 17. These specify the requirements for an Environmental Management Representative;
- ◆ Conditions of Approval Nos 18 to 24. These cover communication and consultation with the community including advertising the construction activities, implementing a complaints management system and establishing Community Liaison Groups;
- ◆ Condition of Approval No 25 specifies the requirements of a Flora and Fauna Management Plan;
- ◆ Condition of Approval No 26 ensures that the Proponent implements the compensatory offset measures as described in *Tugun Bypass Stewart Road to Kennedy Drive – Compensatory Habitat* (Appendix H of the Submissions Report) and Statement of Commitment No. 17, prior to the Project opening to traffic;
- ◆ Condition of Approval No 27 specifies the requirements of a Landscape Plan;
- ◆ Condition of Approval No 28 specifies the requirements of a Indigenous Heritage Management Plan;
- ◆ Condition of Approval No 29 identifies requirements if any unexpected historical relics are found;
- ◆ Conditions of Approval Nos 30 to 32, which cover noise and vibration management;
- ◆ Conditions of Approval Nos 33 to 37, which cover soil (including acid sulphate soils), water and spoil management;
- ◆ Condition of Approval No 38 to 40 which cover air quality management during construction;
- ◆ Conditions of Approval Nos 41 to 42 which cover the management of property damage issues;
- ◆ Condition of Approval Nos 43 to 44 which cover the management of construction traffic;
- ◆ Condition of Approval No 45 ensures that opportunities to redistribute road space that would be created by the project are investigated to the benefit of pedestrian access, cycleways and public transport opportunities;
- ◆ Condition of Approval No 46 specifies the requirements for waste management and recycling;
- ◆ Condition of Approval No 47 specifies the requirements for a Hazard and Risk Management Plan;

- ◆ Condition of Approval No 48 which requires the management of alterations to utilities and services;
- ◆ Condition of Approval No 49 which sets criteria for the location of construction compounds and ancillary facilities required for the construction of the project; and
- ◆ Condition of Approval No 50 which sets design and construction standards for bridges and culverts.



## 4 CONCLUSIONS AND RECOMMENDATIONS

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The NSW Roads and Traffic Authority (RTA) and Queensland Department of Main Roads (QDMR) are proposing to construct the Tugun Bypass to alleviate traffic congestion on the Gold Coast Highway/Pacific Highway corridor between Currumbin and Tweed Heads. The project would traverse areas under the jurisdictions of Queensland and NSW. The proposed alignment also passes through the Gold Coast (Coolangatta) Airport which is Commonwealth land and currently leased by Gold Coast Airport Limited.

The proposed project involves construction and operation of a 7km long bypass that would predominantly follow an alignment to the west of the existing Gold Coast Airport main runway, and would consist of a four-lane restricted access motorway with a central median to separate north-south traffic flows at a posted speed of 100km/h. The median would be wide enough to allow future upgrading to six lanes. Grade-separated interchanges would be provided at Stewart Road and at the Tweed Heads Bypass (around 1km north of Kennedy Drive) in NSW and would provide for all traffic movements and connections to the local road network. The proposal also includes environmental mitigation initiatives and a compensatory habitat package.

The proposed project would separate local traffic from tourist and most heavy vehicle traffic; reduce congestion, travel times and air pollution along the existing highway; and provide opportunities for improved public transport. However, it would have significant ecological, cultural heritage and groundwater impacts within NSW for a project designed to alleviate traffic impacts within Queensland.

The capital cost of the proposal is \$360 million. The Queensland Government has committed \$240 million to the project, and the Commonwealth Government has committed \$120 million. If approved, construction would begin by early 2006 and take approximately 18 to 24 months to complete.

The Department believes that the proposed project would meet its key objective through the provision of additional road capacity that would remove a significant proportion of inter-state vehicles from the Gold Coast Highway, including heavy vehicles. In particular, the additional road capacity would remove a significant proportion of inter-state vehicles from the Gold Coast Highway, including heavy vehicles, and would provide travel time savings of approximately 20 minutes in 2017. Without the proposed Bypass, travel times on the Gold Coast Highway would stretch beyond 30 minutes. The project would create an effective and safe inter-state transport corridor and would delay the need for a future upgrading of the Gold Coast Highway.

Importantly, the alignment of the proposed project has been developed to avoid ecologically sensitive areas including Swamp Orchid habitat, Long-nosed Potoroo habitat and Wallum Sedge Frog breeding ponds. However, the proposed project would result in the removal of 45 hectares of native vegetation communities (19 hectares in NSW).

The Department considers that the final proposed compensatory habitat package represents a well-defined and complete offset that is commensurate with the impacts of the project. The proposed conservation areas, supported by the management strategies, would provide a medium- to long-term net biodiversity benefit in the locality. Particularly important would be the buffer around the Cobaki Broadwater and protection of significant habitat for the Long-nosed Potoroo.

The vegetation outside of NSW provides important habitat for threatened flora and fauna and is significant in terms of population viability. Best practice mitigation measures would be implemented

during construction and the proposed project would be designed to include fauna crossings for mammals and frogs.

A number of known archaeological sites occur adjacent to the proposed project. During the initial stages of construction, there would be potential for new cultural material to be discovered, particularly isolated artefacts or material as part of a larger midden site. There is also the potential to discover burial sites within some areas, particularly near the Queensland border (within NSW and Commonwealth land). However, following construction, much of the route, with the exception of the tunnel, would maintain sub-surface integrity. Where artefacts are discovered and can be salvaged, they would be left *in situ* if practicable or be returned on-site. Ongoing monitoring and consultation with Traditional Owners would occur throughout the construction period.

Overall, the proposed project could be approved subject to the effective implementation of the Proponent's Statement of Commitments. The Statement of Commitments provides a comprehensive set of mitigation strategies for construction and operation of the proposed project. To ensure appropriate environmental outcomes are achieved, the Department has recommended a number of strategically-focused Conditions of Approval that establish rigorous environmental management and auditing processes to ensure that the Statement of Commitments are implemented effectively. The recommended Conditions of Approval would ensure that the proposed project delivers a good environmental and social outcome, including:

- ◆ a stringent environmental management framework to ensure that construction impacts are avoided, mitigated or managed;
- ◆ good communication strategies with the affected community and stakeholders;
- ◆ a well-defined compensatory offset package that would be implemented prior to the project opening to traffic, thereby achieving an immediate and long-term conservation outcome in NSW;
- ◆ comprehensive planning and communication to manage cultural heritage issues during construction to the satisfaction of the Department and in consultation with Traditional Owners and the DEC; and
- ◆ processes to ensure that opportunities to improve pedestrian access, cycleways and public transport are realised within the region.

The project would provide an important inter-state transport link. It is recommended that should the project proceed, it would be essential for conditions to be applied so as to ensure that, to the greatest extent practicable, environmental impacts are avoided, minimised and/or mitigated, the proposal is accepted by stakeholder communities and the long term social and conservation benefits are realised. The attached instrument of approval lists all the recommended conditions of any approval.

## APPENDIX A: SECTION 75I CONSIDERATIONS

Section 75I of the EP&A Act identifies items that the Director-General's environmental assessment report is to include.

|                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) a copy of the proponent's environmental assessment                                                                                                                                                                                                                                                                                           | A copy of the proponent's environmental assessment can be viewed at <a href="http://www.mainroads.qld.gov.au/content/Tugun+Bypass+Project">www.mainroads.qld.gov.au/content/Tugun Bypass Project</a> . A link is provided on the Department's web site ( <a href="http://www.planning.nsw.gov.au">www.planning.nsw.gov.au</a> ). |
| (b) any advice provided by public authorities on the project                                                                                                                                                                                                                                                                                     | Advice was received from DEC, DNR, DPI (Fisheries) and Department of Lands. Copies of this advice is provided A link is provided on the Department's web site ( <a href="http://www.planning.nsw.gov.au">www.planning.nsw.gov.au</a> ).                                                                                          |
| (c) a copy of any report of a panel constituted under section 75G in respect of the project                                                                                                                                                                                                                                                      | Not applicable.                                                                                                                                                                                                                                                                                                                  |
| (d) a copy or reference to the provisions of any State Environmental Planning Policy that substantially govern the carrying out of the project                                                                                                                                                                                                   | Not applicable.                                                                                                                                                                                                                                                                                                                  |
| (e) except in the case of a critical infrastructure project—a copy of or reference to the provisions of any environmental planning instrument that would (but for this Part) substantially govern the carrying out of the project and that have been taken into consideration in the environmental assessment of the project under this Division | Not applicable.                                                                                                                                                                                                                                                                                                                  |
| (f) any environmental assessment undertaken by the Director-General or other matter the Director-General considers appropriate                                                                                                                                                                                                                   | This Report.                                                                                                                                                                                                                                                                                                                     |



## APPENDIX B: PREVALENT TRANSPORT STRATEGIES

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### Auslink

AusLink is comprised of a range of components including:

- The AusLink Investment Programme, which sets out the Australian Government's investment priorities for nationally important land transport infrastructure over the next five years,
- The AusLink Network of important road and rail infrastructure links, including intermodal transfer facilities, that are the focus of the Australian Government's investment under the AusLink Investment Programme.

The objectives of Auslink include the development of an integrated National Transport Network which:

- improves national and interregional connectivity for people, communities, regions and industry
- improves national, interregional and international logistics
- enhances national, interregional and international trade
- enhances health, safety and security
- is consistent with the obligation to current and future generations to sustain the environment
- is consistent with viable, long-term economic and social outcomes
- is linked effectively to the broader transport network

The Auslink Network includes the Pacific Highway between Newcastle and Brisbane. The Tugun Bypass, as proposed, is identified in the AusLink Investment Programme – National Projects and if approved, is to receive Commonwealth funding of \$120M.

### South East Queensland Regional Plan and South East Queensland Infrastructure Plan 2005 – 2026

This Queensland Government Strategy provides a regional vision for South East Queensland that incorporates a range of desired regional outcomes, including:

- Regional infrastructure and services are planned, coordinated and delivered in a timely manner to support existing and future settlement patterns and desired community outcomes,
- A connected and accessible region based on an integrated transport system that supports more compact urban growth and efficient travel; connects people, places, goods and services; and promotes public transport use, walking and cycling.

The Plan incorporates a number of Sub-regional transport plans. The Gold Coast sub regional transport plan includes the Tugun Bypass, rail investigation of the Gold Coast railway to Coolangatta, and quality public transport route investigations (road based) from Broadbeach to Coolangatta.

### Action for Transport 2010

This NSW Government Strategy, Action for Transport 2010 outlines the long term transport vision for NSW and provides a program for the expansion of rail, bus networks and major roads, and incorporates 12 key actions. Actions relevant to this proposal include:

- Improving access for our rural communities,
- Making freight more competitive, and
- Preventing accidents and saving lives.

As part of the North Coast section of the Strategy, the Pacific Highway has been identified as one of Australia's most significant freight routes, with its upgrading identified as a key initiative. In New South Wales the Tweed Bypass provides a dual carriageway to the Queensland border. Although not formally part of Action for Transport 2010 or the NSW Pacific Highway Upgrading Program, it is considered to be generally consistent with these strategies.

### Related Strategies and Policies

- ◆ Auslink
- ◆ South East Queensland Regional Plan and South East Queensland Infrastructure Plan 2005-2026 (Queensland Government 2005)
- ◆ Action for Transport 2010 – An Integrated Transport Plan for New South Wales (New South Wales Department of Transport 1998)
- ◆ Gold Coast City Transport Plan (Gold Coast City Council 1998)
- ◆ South East Queensland Regional Framework for Growth Management (Queensland Government 1998)
- ◆ Integrated Regional Transport Plan for South East Queensland (Queensland Transport 1997)
- ◆ Transport 2007 – An Action Plan for South East Queensland (Queensland Transport 2001)
- ◆ South East Queensland Freight Study (Queensland Transport 1996)
- ◆ Southern Gold Coast – Tweed Corridor Study – Land Use and Transport Study (Queensland Transport 1998)
- ◆ North Coast Regional Environmental Plan (NSW Department of Planning 1988)
- ◆ North Coast Urban Development Strategy (NSW Department of Planning 1995)
- ◆ Northern Rivers Regional Strategy, Final Report of Phase One (NOREDO, NOROCO and NSW Department of Planning 1998)
- ◆ North Coast Road Strategy (NSW RTA 1992)
- ◆ Upgrading the Pacific Highway: Ten Year Pacific Highway Reconstruction Program (NSW RTA 1997)