

## 4. Context for the Project

### 4.1 Planning Context

A preliminary review of the statutory position / permissibility of the project under applicable environmental planning instruments has been undertaken. The results of this review are summarised below.

#### 4.1.1 Environmental Planning and Assessment Act 1979

All development in NSW is assessed in accordance with the provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Environmental Planning and Assessment Regulation 2000 (the Regulation).

#### Changes to the EP&A Act

The NSW Parliament passed the *Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Act 2005 No 43* on 16 June 2005. This amendment came into force on 1 August 2005.

The amendment introduces a new Part 3A to the EP&A Act to cover the assessment of major infrastructure development. This type of development was previously assessed under Part 4 and / or Part 5 of the EP&A Act.

#### Application of Part 3A of the EP&A Act to the Woolgoolga to Wells Crossing Project

By an order gazetted on 29 July 2005, the Minister for Planning declared that Part 3A applies to all projects for which the proponent is also the determining authority and which otherwise would have required an environmental impact statement to be obtained under Part 5.

Within the meaning of Part 5 of the EP&A Act, the RTA is both the proponent and the determining authority for the Woolgoolga to Wells Crossing project. The RTA has decided that it will be seeking assessment of the Woolgoolga to Wells Crossing Project under Part 3A.

Under Part 3A the scope of environmental assessment (EA) would be determined by the Director-General of Planning, who issues EA requirements after consultation with the relevant public authorities and local councils. The RTA will be seeking a Part 3A application for project approval in the near future.

#### 4.1.2 Local Government Authorities

The study area is located within the Coffs Harbour City Local Government Area (LGA) (incorporating part of the former Pristine Waters LGA) and the recently formed Clarence Valley LGA, formed by the amalgamation of Copmanhurst, Grafton, Maclean and Pristine Waters (part) LGAs in February 2004. The former Pristine Waters LGA was created in July 2000 as a result of the amalgamation of Ulmarra and Nymboida LGAs.

To date, there have been no amendments to the local environmental plans (LEPs) to reflect the new authority boundaries, although it is noted that Coffs Harbour City Council is currently reviewing its LEP to address this. Two LEPs apply to the study area:

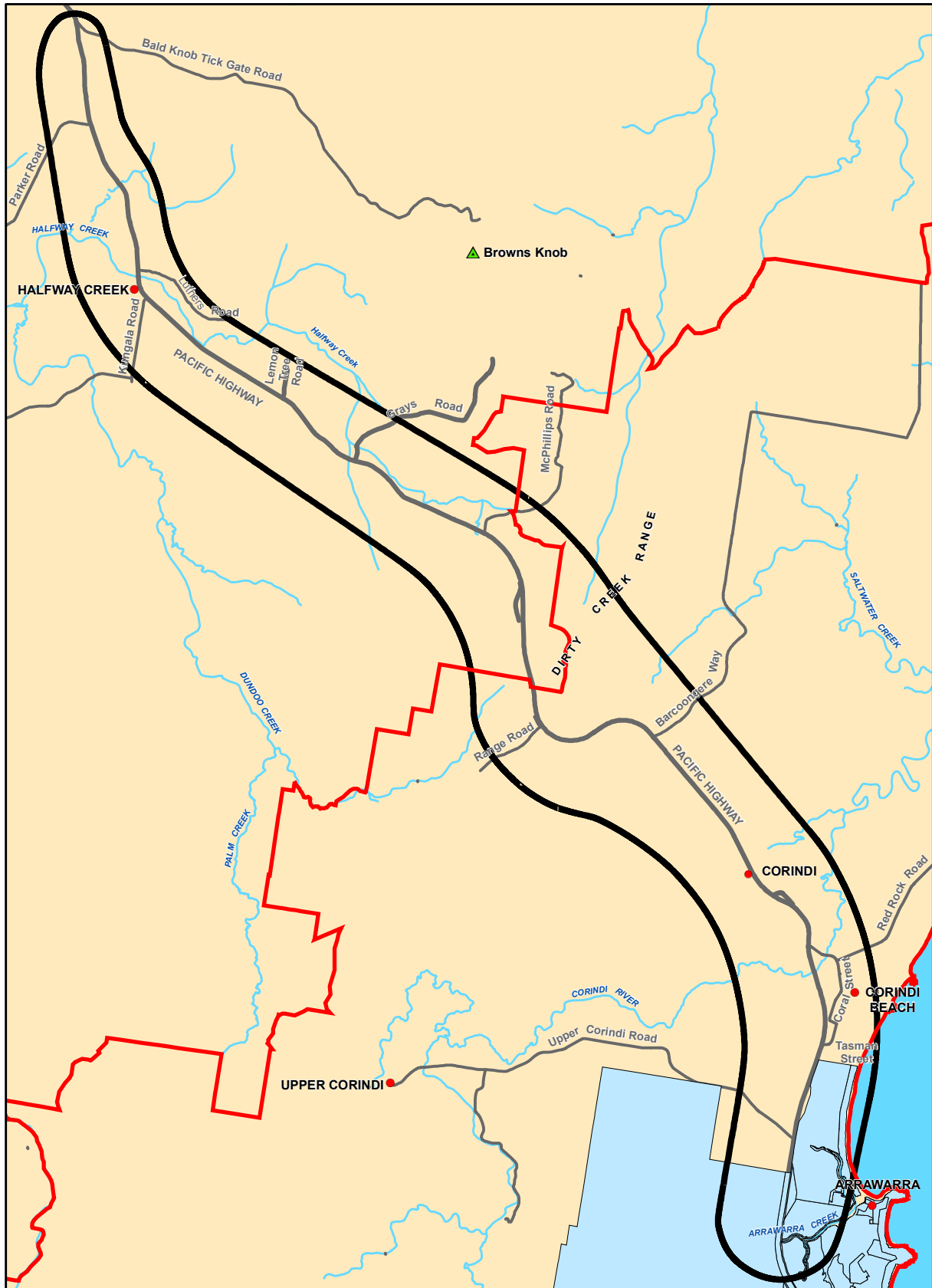
- ▶ The Coffs Harbour City LEP 2000, administered by Coffs Harbour City Council; and
- ▶ The Ulmarra LEP 1992, administered by Coffs Harbour City Council within the Coffs Harbour City LGA and Clarence Valley Council within the Clarence Valley LGA.

The boundaries of the Coffs Harbour City LEP 2000 and Ulmarra LEP 1992, and the Coffs Harbour City LGA and Clarence Valley LGA are shown on Figure 4.1.


The LEPs, land use zones occurring in the study area and the applicable consent authority are summarised in Table 4.1.

**Table 4.1 LEPs Applicable to the Study Area**

<b>LEP</b>	<b>Consent Authority</b>	<b>Land Use Zones in Study Area</b>
Coffs Harbour City LEP 2000	Coffs Harbour City Council	Rural 1A Agriculture Rural 1F State Forest Special Uses 5A Community Purposes – Classified Road Open Space 6A Public Recreation Environmental Protection 7A Habitat and Catchment Environmental Protection 7B Scenic Buffer
Ulmarra LEP 1992	Coffs Harbour City Council (within Coffs Harbour City LGA) Clarence Valley Council (within Clarence Valley LGA)	1(a) (General Rural Zone) 1(e) (Rural 'E' (Urban Investigation) Zone) 1(f) (Rural (Forests) Zone) 1(h) (Rural (Horticultural Holdings) Zone) 2 (Village Zone) 6(a) (Open Space Zone) 7(f1) (Environmental Protection (Coastal Lands Protection) Zone)



/NW/C\_PRR\_Fig\_1\_LGA\_LEP\_Boundaries\_300306.mxd 30 March 2006

<p><b>SCALE 1:100,000</b></p> <p>0.5 0 0.5 1 1.5</p> <p>Kilometres</p> <p>Map Projection: Universal Transverse Mercator Horizontal Datum: Geodetic Datum of Australia 1994 Grid: Map Grid of Australia, Zone 56</p>	<p>GRID N</p> 	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid red; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Local Govt Area</li> <li><span style="border: 2px solid black; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Study Area</li> <li><span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> River/Creek</li> </ul>	<ul style="list-style-type: none"> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Coffs Harbour City LEP (2000) Area</li> <li><span style="background-color: lightorange; border: 1px solid black; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Ulmarra LEP (1992) Area</li> </ul>	<ul style="list-style-type: none"> <li><span style="border-bottom: 2px solid black; width: 10px; display: inline-block; margin-right: 5px;"></span> Highway</li> <li><span style="border-bottom: 1px solid gray; width: 10px; display: inline-block; margin-right: 5px;"></span> Main Rd</li> <li><span style="color: red; font-size: 1em; margin-right: 5px;">●</span> Locality</li> <li><span style="color: green; font-size: 1em; margin-right: 5px;">▲</span> Hill/Mountain</li> </ul>
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**LGA/LEP Boundaries**

Spatial layers courtesy of Coffs Harbour City Council, NSW Department of Lands, NSW Roads & Traffic Authority, Geoscience Australia, NSW Department of Environment & Conservation, NSW Department of Primary Industries.

**Figure 4.1**

### **Coffs Harbour City LEP 2000**

Roads are permissible with development consent in all applicable land use zones within the boundaries of the Coffs Harbour City LEP in the study area, except Rural 1F State Forest in which case they are prohibited unless deemed to be “*development for the purpose of any activity authorised by or under the Forestry Act 1916*”.

Under the Coffs Harbour City LEP 2000, the proposal falls within the definition of “*road transport undertakings*” listed in Schedule 1 of the LEP. As such, in zones where the proposal would have otherwise required development consent or been prohibited, Clause 7 of the LEP allows such works to be permissible and to be undertaken without the need for development consent.

### **Ulmarra LEP 1992**

Under the Ulmarra LEP 1992, roads are potentially prohibited in all applicable land use zones except 6(a) (Open Space Zone) and 7(f) (Environmental Protection (Coastal Lands Protection) Zone), in which case they are permissible without consent, and with council consent respectively.

For Zones 1(a) (General Rural Zone), 1(e) (Rural ‘E’ (Urban Investigation) Zone), 1(h) (Rural (Horticultural Holdings) Zone) and 2 (Village Zone), the LEP confers a discretion on Coffs Harbour City Council or Clarence Valley Council (as applicable) to decide whether a particular use is consistent with one or more of the objectives of these zones.

Roads are prohibited under the Ulmarra LEP 1992 in the 1(f) (Rural (Forests) Zone) unless:

- ▶ Coffs Harbour City Council or Clarence Valley Council (as applicable) decides that the project is consistent with one or more of the objectives of this zone; or
- ▶ The development is “authorised under the Forestry Act 1916”; or
- ▶ The development is considered as a purpose that “will not adversely affect the usefulness of the land for the purposes of forestry”.

#### **4.1.3 State Environment Planning Policies**

A number of state environmental planning policies (SEPP) are potentially applicable to the project however, the following are directly relevant to the statutory position of the project.

##### **State Environmental Planning Policy No. 4 – Development Without Consent and Miscellaneous Exempt and Complying Development (SEPP 4)**

SEPP 4 (clause 11C) permits development for the purposes of a “*classified road*” (as defined under the *Roads Act 1993*) to be assessed in accordance with Part 5 of the EP&A Act (i.e. without the need for development consent) where it would have otherwise required development consent.

SEPP 4 (clause 11C) does not apply:

- ▶ Where the development is prohibited under an environmental planning instrument (local environmental plan, regional environmental plan or SEPP);
- ▶ Where the development has prescribed impacts on a SEPP 14 wetland (refer below); and
- ▶ Development comprising “the alteration of or addition to, or the extension or demolition of, a building or work” in the following case (subclause 2(6)):

“(a) described in an environmental planning instrument as a heritage item, an item of the environmental heritage or a potential historical archaeological site”.

The Preliminary Non-Indigenous Heritage Assessment (South East Archaeology, 2005) and Preliminary Indigenous Heritage Assessment (South East Archaeology, 2005) undertaken for the project have not identified any heritage items listed on any local environmental plan, regional environmental plan or SEPP within the vicinity of the project. Therefore based on the information available to date, it can be concluded that SEPP 4 would apply in this regard.

#### **State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14)**

As shown on Figure 3.14 there are two SEPP 14 wetlands within the study area, these being located south of Corindi Beach and east of the existing highway.

Subclause 7(1) specifies that any activities involving land clearing, levee construction and drainage and filling of land mapped as being a SEPP 14 wetland is subject to assessment under Part 4 of the EP&A Act. This requires development consent from council and the concurrence of the Director-General of Planning. Council must also forward a copy of the development application to the Director-General of the Department of Environment and Conservation (National Parks and Wildlife Service).

Subject to concept design the preferred route is not expected to involve any of the prescribed impacts on either of these SEPP 14 wetlands.

#### **4.1.4 Summary of Statutory Position**

Based on the above discussions:

- ▶ The combined effects of the savings provisions under the Coffs Harbour City LEP 2000 and SEPP 4 is that the project is deemed to be eligible for assessment under Part 5 of the EP&A Act;
- ▶ The project is potentially prohibited under the Ulmarra LEP 1992 and would need to be considered further in the context of recent amendments to the EP&A Act; and
- ▶ Subject to concept design the preferred route is not expected to trigger the assessment requirements of SEPP 14, and is eligible for assessment under Part 5 of the EP&A Act.

The RTA will be seeking assessment under Part 3A of the EP&A Act from the Department of Planning.

#### **4.1.5 Property Acquisition and Revocation**

The project would involve acquisition of property that is privately and / or government owned. Any potential acquisition would be subject to appropriate compensation in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the *RTA Land Acquisitions Policy 1999*, which includes provision for 'hardship acquisition' at the preferred route stage. This report contains discussion of the potential impacts of the project on properties and businesses and is based on cadastral information available to the project team, the accuracy of which has not yet been verified by any property survey work. Verification would be undertaken as part of the concept design at which time the property acquisition requirements will be confirmed.

Prior to any acquisition of land dedicated under the *National Parks and Wildlife Act 1974* (e.g. national park or state conservation area), revocation of the land in accordance with the Act must first be effected by an Act of Parliament.

Prior to any acquisition of land dedicated under the *Forestry Act 1916* (e.g. state forest or flora reserve), revocation of the land in accordance with the Act must first be effected by one of the following means:

- ▶ Act of Parliament – where the land affected contains lands zoned by Forests NSW for conservation purposes;
- ▶ Resolution of both Houses of Parliament – where the land affected is not zoned for conservation purposes and exceeds 20 hectares; or
- ▶ Notice in the Gazette – where the land affected is not zoned for conservation purposes and is less than 20 hectares.

Under section 42 of the *Aboriginal Land Rights Act 1983*, land vested in a local Aboriginal land council (LALC) may not be compulsorily acquired except by an Act of Parliament.

However, in certain circumstances a LALC may dispose of land voluntarily and therefore it may be possible for the RTA to negotiate to purchase the land. Prior to the purchase by negotiation of lands vested in a LALC, the following must occur in accordance with section 40D(1) of the *Aboriginal Land Rights Act 1983*:

- “(a) A meeting of the Council specifically called for the purpose (being a meeting at which a quorum was present) not less than 80% of the members of the Council present and voting have determined that the land is not of cultural significance to Aborigines of the area and should be disposed of, and*
- (b) the New South Wales Aboriginal Land Council has approved of the disposal, and*
- (c) in the case of disposal of land transferred to an Aboriginal Land Council under section 36” (Claims to Crown lands) “both the Crown Lands Minister referred to in that section and the Minister have been notified of the proposed disposal.”*

#### 4.1.6 Strategic Planning

Strategic planning reports and studies relevant to the study area were reviewed, and the potential implications for the project identified. Table 4.2 summarises the results of this review.

**Table 4.2 Strategic Planning**

Document	Overview	Implications for the Project
<i>North Coast Urban Planning Strategy, 1995</i>	Provides a vision for the future of the North Coast region, identifying areas with the potential for future growth.	The strategy does not identify any land within the study area to be set aside for future development.
<i>Northern Rivers Regional Strategy, 1997</i>	The strategy is based on the principles of sustainable development and builds on the findings of the North Coast Urban Planning Strategy.	The strategy does not identify any land within the study area to be set aside for future development.
<i>Clarence Valley Settlement Strategy, 1999</i>	A sub-regional joint planning project, forming part of the Northern Rivers Regional Strategy.	No settlement is proposed by the strategy within or in close proximity to the study area.  The Pacific Highway is recognised as a national access corridor road and vegetation in the vicinity of Wells Crossing is recognised as being part of a regional greenbelt network.

Document	Overview	Implications for the Project
<i>Coffs Harbour Urban Development Strategy, 1996</i>	Council is currently in the process of updating the plan, which will be known as the “Coffs Harbour Settlement Strategy” and will identify land considered suitable for urban development.	Land within and generally to the north of Corindi Beach has been identified for potential urban development. This land is unlikely to be affected by the project.
<i>The Coffs Harbour Rural Residential Strategy 1999</i>	Provides the strategy for rural residential development in the Coffs Harbour LGA.	No land in the study area has been identified for future rural residential development.
<i>Coffs Harbour City Council Rural Lands Strategic Plan, 2003</i>	Provides a framework for the planning of rural land and rural communities.	Proposes that the Coffs Harbour LEP be amended to remove the 40 ha subdivision restriction on some land zoned 1A Rural Agriculture in the coastal strip. No land within the study area has been identified for rural / residential purposes.
<i>Coffs Harbour Draft Vegetation Strategy, 2003</i>	The aim of the strategy is to protect native vegetation in the Coffs Harbour LGA.	The study area contains vegetation classified by the strategy as having very high or high ecological value.

#### 4.1.7 Government Transport Initiatives

Strategic transport planning documents relevant to the project were reviewed, and the potential implications for the project identified. Table 4.3 summarises the results of this review.

**Table 4.3 Transport Planning**

Document	Overview	Implications for the Project
<i>AusLink: Building our National Transport Future, 2004</i>	The Federal Government's formal policy statement on land transport. Provides a long term plan for funding of transport infrastructure. Under AusLink, the National Highway System and Roads of National Importance will be replaced with a broader and more strategic network of transport corridors. This new AusLink National Network will form the basis of the Federal Government's investment in land transport.	Federal Government funding for Pacific Highway projects is provided under this program.
<i>Pacific Highway Upgrading Program, RTA, 1996</i>	The \$2.2 billion, 10-year upgrading program aims to achieve significant improvements to road conditions, safety and travel times.	The planning of the Woolgoolga to Wells Crossing upgrade is one of the projects being funded under the Pacific Highway Upgrade Program.
<i>Pacific Highway Managing the Impact of Delay, Discussion Paper, RTA, 1999</i>	The paper emphasises the need to coordinate construction activities where delays are likely to occur.	The concept design for the preferred route will take the recommendations of this paper into account.
<i>North Coast Motorway, Memorandum of Understanding between the Government of Australia and the Government of the State of NSW, December 2005.</i>	An understanding between the Government of Australia and the Government of the State of NSW for the development of a high standard North Coast Motorway between the F3 at Beresfield and the Queensland Border.	The Federal and State Governments are investigating ways to accelerate the upgrade program, through the construction of the North Coast Motorway as a toll road. The Woolgoolga to Wells Crossing Project may be considered part of a possible future toll road.



## 4.2 Transport Context

### 4.2.1 Predicted Traffic Volumes and Level of Service

A summary of the predicted traffic volumes at 2016 and 2036 is provided in Table 4.4. The level of service (LoS) projections are based on the assumption that no upgrading has occurred (the “do nothing” scenario).

**Table 4.4 Predicted Traffic and Level of Service Summary 2016 and 2036**

Section	At Projected Opening (2016)			At 20 year Horizon (2036)		
	AADT <sup>(1)</sup>	LoS <sup>(1)</sup>	v/c <sup>(3)</sup>	AADT <sup>(1)</sup>	LoS <sup>(2)</sup>	v/c <sup>(3)</sup>
Arrawarra Creek to Corindi Beach	14,224	E	0.77	20,983	F	1.14
Corindi Beach to Dirty Creek Range	11,073	E	0.82	16,336	F	1.20
Dirty Creek Range to Halfway Creek	10,639	D	0.58	15,695	F	0.85
Halfway Creek to Wells Crossing	10,204	D	0.56	15,054	F	0.82

Notes: (1) Annual Average Daily Traffic (AADT) – The number of vehicles crossing at a specific site per year and dividing this number by the number of days in the year (366 days in 2004);

(2) LoS determined from Austroads *Guide to Traffic Engineering Practice – Part 2: Roadway Capacity*; and

(3) v/c is volume / capacity ratio.

The data in Table 4.4 indicates that the operation of the highway at 2016 would start to show unstable flow conditions. Level of service F at 2036 means that the highway would experience serious queuing and delays as it would be operating over capacity. These dates have been adopted for planning purposes only.

### 4.2.2 Intersections

The operation of the at-grade intersections at the design horizon (2036) if no upgrading has occurred (the “do nothing” scenario) is:

- ▶ Tasman Street / Pacific Highway – unsatisfactory;
- ▶ Coral Street / Pacific Highway – unsatisfactory;
- ▶ Range Road / Pacific Highway (access to the blueberry farms) – unsatisfactory;
- ▶ Kungala Road / Pacific Highway – unsatisfactory; and
- ▶ Parker Road – unsatisfactory.

As a result, intersection / interchange treatments may need to be considered as part of the project.

Interchange locations and service roads would depend on the location of the preferred route, and the interaction with the adjacent projects (Sapphire to Woolgoolga and Wells Crossing to Iluka Road) and will be determined as part of the detailed investigations to be undertaken for the preferred route and during the concept design phase.

One possible location being investigated for a grade separated interchange is in the vicinity of Arrawarra Beach Road where there is sufficient width between the existing Highway and the old Pacific Highway (Eggins Drive) to accommodate an interchange.



New service roads would be required in a Class M scenario to provide access to proposed grade separated interchanges or to provide a continuous alternate route. In a Class A scenario new service roads may be provided to assist with the rationalisation of at grade intersections and private accesses.

The service road strategy would aim to improve safety by separating through and local traffic. This may involve use of existing local roads, sections of old highway or the existing highway. Where possible, the new service roads would be located within or immediately adjacent to the upgraded highway, but may also be located outside the preferred route corridor.

#### **4.2.3 Key Aspects of Preliminary Traffic Investigations**

The results of the preliminary traffic investigations indicate that:

- ▶ The Arrawarra Creek to Corindi Beach section and the Dirty Creek Range section will require upgrading prior to 2016;
- ▶ Traffic growth will be defined by the underlying growth in heavy vehicles along the corridor. The growth in heavy vehicles will account for up to four times the growth of other vehicles;
- ▶ Grade separation or alternative access (local access road etc) arrangements will ultimately be required at the following intersections:
  - Tasman Street / Pacific Highway;
  - Coral Street / Pacific Highway;
  - Range Road / Pacific Highway (access to the blueberry farms);
  - Kungala Road / Pacific Highway; and
  - Parker Road / Pacific Highway.

#### **4.2.4 Crash Reduction**

A primary objective of upgrading the Pacific Highway is to improve road user safety. Construction of dual carriageway to current Pacific Highway Upgrade design guidelines will potentially decrease the total number of crashes per 100 MVK if a Class A upgrade or Class M upgrade is undertaken over the entire highway. Based on the potential reduction in accident rates only and the resultant costs, the repayment period would be in the range of 23 to 37 years, dependant on the form of the upgrade (Class A or M).

Data indicates that there is a high incidence of fatigue related crashes. The severity of these types of crashes may be reduced by the use of barriers and provision of runoff areas, clear zones, etc. However, this section of the highway is approximately four to five hours south of Brisbane and as a result, it is within the fatigue zone for long distance travel. During the concept design stage, consideration needs to be given to incorporating rest areas. For this project, there is a requirement to retain or replace rest areas within the study area.

#### **4.2.5 Road User Delay**

Road user delays on the highway are due to either construction or operation. Delays are quantified by assigning a cost to the road user.

## **Construction**

In accordance with RTA design standards, alternate routes for use during construction would need to be designed for an 80 km/h design speed with 3.5 metre wide lanes and one metre shoulders. It has also been assumed that the existing highway operates at 100 km/h when the highway deviates from the existing highway. Construction immediately adjacent to the existing highway would require the existing highway to operate at 80 km/h during the construction phase.

## **Operation**

Operational delays are associated with the length of the new highway and the type of upgrade (refer to Section 4.6 for a description of upgrading scenarios). Operational delays could be attributed to the time required to access a U-Turn facility when an at-grade intersection prohibits a right turn or time required to access a grade separated interchange via a local access road.

### **4.3 Adjoining Projects**

The closest proposed Pacific Highway upgrading projects to the north and south of the Woolgoolga to Wells Crossing project are:

- ▶ Sapphire to Woolgoolga project to the south; and the
- ▶ Wells Crossing to Iluka Road project to the north.

The status of these projects is summarised below.

#### **Sapphire to Woolgoolga Project**

The Sapphire to Woolgoolga project includes an eastern bypass of Woolgoolga. This project is substantially advanced with a preferred route announced in late 2004.

#### **Wells Crossing to Iluka Road Project**

The Wells Crossing to Iluka Road project potentially involves a bypass of Grafton depending on the alignment of a preferred route. Route options for this project were announced in October 2005 and is at a similar stage of planning as the Woolgoolga to Wells Crossing project.

## **4.4 Need for the Project**

### **4.4.1 The “Do Nothing” Option**

Consideration was given to the “Do-Nothing” option. The Do-Nothing option should be interpreted as retaining the Highway as the existing two-lane pavement and only undertaking maintenance works such as pavement patching and re-sheeting works and linemarking when required.

### **4.4.2 The Implications of Doing Nothing**

Although the “Do Nothing” option would not generate the environmental impacts associated with the proposed upgrade, this option would not meet the aims of the NSW and Commonwealth Governments for the future of the Pacific Highway and would not meet the community’s needs for improving local access, safety, traffic efficiency and capacity of this section of road. In addition the Do-Nothing option would not meet the goals and objectives of the Pacific Highway Upgrade Program. If not upgraded, this section of the Highway would incur an increasing number of crashes and traffic delays in proportion to the ongoing growth in traffic volumes.

In summary, the consequences of not proceeding with the proposed upgrade or deferral would:

- ▶ Compound the existing dis-benefits of the undivided two-lane road;
- ▶ Increase the crash rate to approximately 29.5 crashes per 100 million vehicle kilometres within the study area by 2016. This equates to an average of approximately 1.5 fatal and 16 serious injury accidents per year. By 2036 it is expected that there would be approximately 2.5 fatal and 27 serious injury crashes per year;
- ▶ Fail to improve transport efficiency, reduce travel times and vehicle operating costs;
- ▶ Fail to improve local traffic and pedestrian access including connectivity between residential areas located along the length of the Highway; and
- ▶ Exacerbate the impediment to transport and road safety improvements, which have been specifically identified for the Highway in the State Government’s Pacific Highway Upgrade Program.

It is estimated that reducing the number of crashes would save the community in the order of \$6.4 million per annum by 2036, as well as reducing the personal effects of road crash trauma.

A reduction in travel times and freight transport costs would benefit the economy and encourage regional economic development.

Consequently the “do nothing” option is not considered a viable alternative and was subsequently rejected by the RTA as a feasible option.

#### 4.4.3 Highway Upgrade Timing

Based on traffic demands, the proposed lane configurations for the 2036 horizon are listed in Table 4.5.

**Table 4.5 Upgrade Timing**

Section	Upgrade Timing <sup>(1)</sup>	2036 Configuration
Arwarra Creek to Corindi Beach	2011	Four lanes
Corindi Beach to Dirty Creek Range	2021	Four lanes
Dirty Creek Range	2009	Four lanes <sup>(2)</sup>
Dirty Creek Range to Halfway Creek	2023	Four lanes
Halfway Creek to Wells Crossing	2025	Four lanes

Notes: (1) Timeframe within which initial upgrade may be required; and

(2) Dirty Creek Range would require an additional climbing lane assuming there are no heavy vehicle performance improvements from current situation.

Based on a sustained growth of 3%, the modelling indicates that the highway would not need to be upgraded to six lanes until 2045.

#### 4.4.4 Base Case Scenario

The base case scenario is considered for the purposes of economic analysis and comparison. It is assumed that the base case or “do nothing” scenario would be limited to minor upgrades of the existing highway on its current alignment.

The base case assessment has considered the following minimum upgrade works by 2036:

- ▶ Sections of highway that will require minor upgrade and / or reconstruction;
- ▶ Sections of highway that will require additional overtaking lanes or climbing lanes;
- ▶ Provision of additional local access roads;
- ▶ Intersection modifications or upgrades; and
- ▶ Assessment of bridge structures.

This base case scenario has been considered to determine the extent of works already required along the highway.

## **4.5 Upgrading Scenarios**

The upgrade of the Pacific Highway considers two broad scenarios. These are described below.

### **4.5.1 Class A Upgrade Scenario**

The Class A upgrade scenario would be a four-lane (with the provision for up to six lanes) carriageway, 100 km/h posted speed, limited access condition roadway with at-grade intersections.

It is anticipated that the highway would be upgraded to a Class A standard initially, and ultimately upgraded to a Class M standard.

This scenario presents several challenges with respect to the rationalisation of accesses. Generally, at-grade intersections would be upgraded where required to allow for all turn movements while some intersections would be limited to left in / left out movements only with U-Turn facilities being provided at regular intervals between intersections.

Private accesses would also be rationalised wherever possible. This would be achieved by the use of local service roads to connect several accesses into one intersection adjoining the highway.

### **4.5.2 Class M Upgrade Scenario**

The Class M upgrade scenario would be a four-lane (with the provision for up to six lanes) carriageway, 110 km/h posted speed, controlled access roadway with grade separated interchange accesses.

This scenario presents several challenges with respect to the rationalisation of accesses. The spacing between grade separated interchanges would be critical to ensure that the community and road users are not forced into long circuitous routes to gain access to their properties via local access roads.

As a result of the constrained condition of the corridor in some parts of the existing alignment the retrofitting of local access roads to Class M from Class A would be more difficult. This is particularly evident around the recently completed Halfway Creek duplication where Halfway Creek and the Yuraygir State Conservation Area are directly adjacent to the southbound carriageway.

In order to achieve a 110 km/h posted speed, a significant proportion of the existing alignment would require reconstruction where the upgrade proposes to reuse the existing highway as one carriageway.

### **4.5.3 Property Impact and Access Rationalisation Strategies**

As noted above, private accesses would be rationalised wherever possible. Where private accesses cannot be connected to the Highway via a local access (service) road in the Class A (Arterial) scenario, direct highway access would be maintained but altered to a left in / left out arrangement. U-Turn facilities would be provided at regular intervals between left in / left out intersections.

### **4.5.4 Interchange / Intersection Location Strategies**

The two upgrade projects adjoining the Woolgoolga to Wells Crossing project involve grade separated interchanges. These interchanges would be considered in the planning for the Woolgoolga to Wells Crossing section.

Provision of one grade separated interchange has been considered between Arrawarra Creek and Corindi Beach. Traffic predictions indicate that before 2036, grade separations and / or local access road facilities may also be required on all the other major side roads in the study area. The location of interchanges will take into account the following:

- ▶ Spacing with other grade separated interchanges, particularly adjacent interchanges;
- ▶ The traffic generation catchment and the need to capture sufficient traffic to ensure cost effectiveness;
- ▶ Opportunities to facilitate commercial development; and
- ▶ The visual impact.

The Class A (Arterial) upgrade scenario would require a change of form on many of the side road intersections within the study area. For duplication, right turns at many intersections would be denied. Alternative arrangements would be provided, such as downstream U-Turn facilities.

The location of the grade separated interchange would be determined as part of detailed investigations to be undertaken during the concept design phase. One possible location being investigated for a grade separated interchange is in the vicinity of Arrawarra Beach Road where there is sufficient width between the existing Highway and the old Pacific Highway (Eggins Drive) to accommodate an interchange.

### **4.5.5 Pedestrian, Cyclist and Public Transport Provisions**

Pedestrian access to the carriageways would not be allowed for in the Class M (Motorway) upgrade scenario. Separate pedestrian facilities would need to be provided where demand exists.

There are many bus stops located along the existing highway, which would be rationalised as part of the upgrade. This may be achieved by providing bus stops on side roads with formalised intersections and U-Turn facilities, or through the provision of new local access roads. Provision for cyclists will be on the outer shoulder of each carriageway. These would need to be coordinated with cycleways proposed by council and others.