



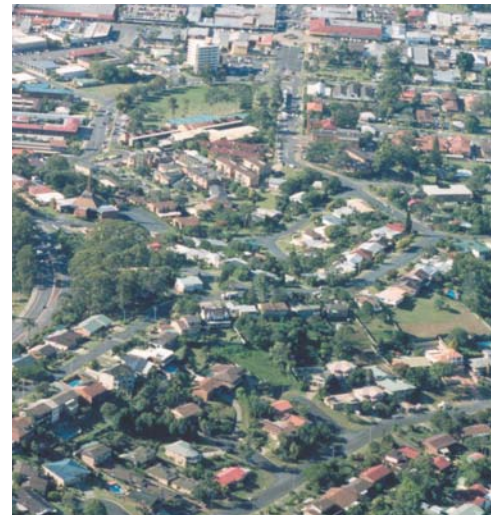
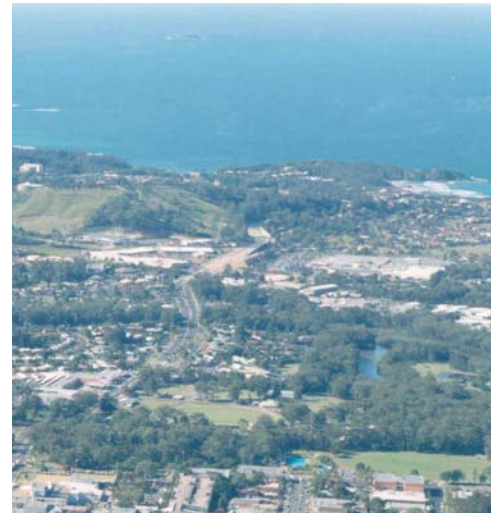
Department of
Infrastructure, Planning and Natural Resources



Coffs Harbour Highway Planning

Coffs Harbour Section

STRATEGY REPORT
FEBRUARY 2004



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Coffs Harbour Highway Planning Coffs Harbour Section

Strategy Report

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Table of Contents

<i>Section</i>	<i>Page</i>
<i>Executive Summary</i>	<i>iv</i>
<i>1 Introduction</i>	<i>1</i>
1.1 Project Background	1
1.2 Purpose of Report	2
1.3 Study Area	2
1.4 Need for and Objectives of the Project	2
1.5 Study Methodology	3
1.6 Structure of the Report	3
<i>2 Stakeholder Involvement</i>	<i>5</i>
2.1 Scope of Activities	5
2.2 Peer Review	5
2.3 Community Focus Group	6
2.4 Planning Focus Meetings	7
2.5 Forthcoming Activities	7
<i>3 Development of Strategy</i>	<i>8</i>
3.1 Overview	8
3.2 Strategic Access Arrangements	8
3.3 Constraints Analysis	9
3.4 Urban Design and Landscape Context	10
3.5 Existing Highway	11
3.6 Development of Inner Bypass Route Options	11
<i>4 Description of Corridor Options</i>	<i>13</i>
4.1 Existing Highway Upgrade	13
4.2 Inner Bypass	13
<i>5 Traffic and Transport Issues</i>	<i>16</i>
5.1 Introduction	16
5.2 Existing and Future Traffic Volumes	16
5.3 Future Intersection Performance	23
5.4 Other Operational Issues	23
<i>6 Cost and Economic Evaluation</i>	<i>26</i>
6.1 Existing Highway Upgrade	26
6.2 Inner Bypass Corridor Options	29
6.3 Economic Evaluation	35
<i>7 Socio-Economic Issues</i>	<i>41</i>
7.1 Statutory and Strategic Planning Issues	41
7.2 Agricultural Land Use Effects	42
7.3 Urban Land Use and Property	44
7.4 Traffic Noise	44
7.5 Visual Amenity	45
7.6 Socio-Economic Issues	46
7.7 Indigenous Heritage	48
7.8 Non-Indigenous Heritage	49

8	<i>Bio-Physical Issues</i>	51
8.1	Topography / Hydrology	51
8.2	Geology and Soils	51
8.3	Biodiversity	52
8.4	Air Quality	53
9	<i>Conclusions</i>	55
10	<i>References</i>	59

Appendix A

Cost Estimates

Appendix B

Detailed Economic Analysis

Appendix C

Air Quality Constraints for Roadway Locations

Appendix D

Wilkie Fleming Agriculture Report

List of Figures

Figure 1.1	Study Area
Figure 3.1	Corridor Options
Figure 3.2	Strategic Highway Access Plan
Figure 3.3	Ground Elevation Map
Figure 3.4	Land Use
Figure 3.5	Agriculture Land Classification
Figure 3.6	Native Vegetation
Figure 3.7	Key Habitats and Corridors
Figure 3.8	Composite Constraints Map
Figure 4.1	Existing Highway Upgrade Concept
Figure 4.2	Inner Bypass Options
Figure 7.1	Non Indigenous Heritage

Executive Summary

Background and Context

The Coffs Harbour Highway Planning Strategy (CHHPS) is being developed with the objective of addressing the need to upgrade the Pacific Highway between Sapphire and Woolgoolga, while planning for future traffic needs within the Coffs Harbour urban area.

Objectives established for the CHHPS are listed in Table 1 as they are related to the principal objectives of the Pacific Highway Upgrading Program.

Table 1 Project Objectives

Pacific Highway Program Objectives	Coffs Harbour Highway Planning Strategy Objectives
Significantly reduced road accidents and Injuries	<ul style="list-style-type: none">• A dual carriageway road with potential to reduce crash rates to 15 crashes per 100MVK over the project length.
Reduced travel times	<ul style="list-style-type: none">• A design which would allow sign posting at a minimum of 100km/h in rural areas and 80km/h in urban areas.• Provide flood immunity on at least one carriageway for a 1: 100 year flood event
Reduced freight transport costs	<ul style="list-style-type: none">• A design that minimises vehicle operating costs.• A design that meets or exceeds B-Double requirements, including at intersections where required.
A community satisfied with physical development of the route	<ul style="list-style-type: none">• Integrate input from local communities into development of the Project through the implementation of a comprehensive program of community consultation and participation• A solution at all potential conflict points with local traffic that meets community expectations and maintains local connectivity.
A route that supports economic development.	<ul style="list-style-type: none">• Provide transport developments that are complementary with land use• Consider delay management strategies to minimise disruption to local and through traffic and maintain access to affected properties and land during construction
Upgrading of the route managed in accordance with Ecologically Sustainable Development principles.	<ul style="list-style-type: none">• Cumulative impacts assessed and addressed• Best environmental practical incorporated.• RTA Guidelines for managing environmental issues (biodiversity, noise impacts, water quality, acid sulphate soils, etc) are met.
Maximum effectiveness of expenditure objectives	<ul style="list-style-type: none">• Maximise the use of the existing road asset where consistent with the Project• Ensure the project outcomes achieve value for money

This Strategy Report has been prepared to document the overall process of identifying, developing and evaluating the route options for the southern (Coffs Harbour) section of the strategy area.

Stakeholder Involvement

Since the project launch in September 2001, there has been extensive interaction with and involvement of a wide range of community groups and individuals. Details of community involvement activities and feedback from stakeholders have been documented in various reports prepared as part of the Coffs Harbour Highway Planning Strategy.

A Community Focus Group was formed in January 2001 to assist communication between the project team, stakeholders and the local community. Feedback and information from the group has provided valuable input on project development issues and community attitudes to the project.

Identification of Upgrade Corridors

The CHHPS was publicly launched in September 2001 and, in March 2002, an information sheet containing the following key announcements was released:

- identification of four initial corridor options for the northern section of the strategy area from Sapphire to Woolgoolga
- a decision that the inner corridor in the southern section of the strategy area between Sawtell and Sapphire / Moonee was the only potentially feasible bypass option suitable for further consideration
- commencement of a comparison of upgrading the existing highway in the southern section of the strategy area as an alternative to an inner corridor bypass

Development of Route Options

In parallel with investigations into the Existing Highway and Inner Bypass corridors, a review of a proposal for a western bypass corridor known as the Coastal Ridge Way (CRW) has been undertaken in response to a request from Coffs Harbour City Council. This review is documented in a separate report (Connell Wagner, 2004a).

The concept for an “ultimate” upgrade of the existing highway through Coffs Harbour is based on contemporary urban motorway schemes and has been developed to provide a dual-carriageway facility with grade-separated interchanges and overpasses at key locations for access to and from the highway and/or for local east-west traffic movements. These would be complemented by the provision of local north-south service roads or adjustments to existing local roads for access to properties and businesses along the existing corridor.

Two indicative route options have been identified for the Inner Bypass in both the southern and northern sections of the inner bypass corridor. The four component routes are between 4.5km and 6.8km long with a common ‘cross-over point’ in the vicinity of Coramba Road, near its intersection with Bennetts Road. The northern and southern sections of the options are interchangeable and combine to form a total of four potential route options starting on the existing Pacific Highway just south of Englands Road, passing through the common point, and rejoining the Pacific Highway north of Coffs Harbour at Korora Hill. These four route components are the least disruptive and most practicably constructed route alignments developed within the inner corridor. Each component has been designed so as to minimise negative visual impacts of the proposed roadway.

Assessment of Route Options

A series of Working Papers has been prepared to assess and compare the impacts of the Inner Bypass and the Existing Highway Upgrade across a range of transportation, socio-economic and environmental planning issues. The purpose of this Strategy Report is to document the overall process of identifying, developing and evaluating the options. The report will facilitate a decision on the preferred highway strategy by allowing detailed consideration of the operational characteristics and costs of each option, as well as potential social, environmental and property impacts and available mitigation measures to off-set these impacts.

Table 2 summarises the main features of the options, some key performance aspects and the nature of the impacts identified across a range of parameters.

Table 2 Comparative Assessment

Assessment Factor	Existing Highway Upgrade	Inner Bypass
Functional outcomes⁽¹⁾		
Total route length/ New Construction length	11.4/11.0km	12.0-12.6km/11.0-11.6km
Tunnels (Number and length)	1 tunnel of 550m length at Macauleys Headland	Three possible tunnels up to 1,315m in total length
Pavement Area ('000m ²)	330	220-230
Bridges – Deck Area (000m ²)	10	16-22
Earthworks with tunnels – Cut to Fill (million m ³)	1.2	0.9-3.2
Earthworks without optional tunnels – Cut to Fill (million m ³)	NA	2.1-3.7
Highest Point above Sea Level	50m	80-97m
Highest Embankment	10m	23m
Deepest Cutting with tunnels	12m	29m
Maximum Grade	8%	6%
Estimated Cost – Englands Road to the end of the existing dual carriageway highway at Sapphire (\$2003)	\$690M	\$280-425M
Cost per Km (\$2003)	\$63M	\$23M-34M
Benefits (PVB) (30 year period)	\$500M	\$229M-\$238M
BCR	0.85	0.62-0.93
Predicted 2021 Average Daily Traffic Volumes (All Vehicles)⁽²⁾		
On Bypass	NA	12,000-16,900
On Existing Highway – North of Bray Street North of James Small Drive (south)	49,000 35,700	35,300 21,600
Predicted 2021 Average Daily Heavy Vehicle Volumes⁽²⁾		
On Bypass	NA	1,700-2,100
On Existing Highway – North of Bray Street North of James Small Drive (south)	4,850 3,700	2,900 1,800
2021 Transport Efficiency		
Annual Travel Time Savings (hrs)	1,585,465	737,637
Annual Savings (increase) in Vehicle Kilometres of Travel (km)	5,974,850	(729,750)
Annual Travel Time Savings (\$) (VOC)	\$36.5M	\$17.0M
Annual Savings (increase) in Vehicle Operating Costs (\$)	\$1.6M	\$(0.2M)
Heavy Vehicle Travel Time – Englands Rd to the end of the existing dual carriageway at Sapphire (mins)	9.5	9.0

Assessment Factor	Existing Highway Upgrade	Inner Bypass
Socio-Economic Outcomes		
Traffic noise	High adverse – unlikely to meet goals and little opportunity to mitigate	Moderate Adverse – good opportunities to provide compatible adjacent land-use zonings and /or control with barriers/mounds
Air quality	Moderate adverse	Moderate to low adverse
Community Cohesion	High adverse	Low adverse
Amenity Effects	High adverse	Moderate to high adverse
Access and Movement Patterns (local traffic)	Moderate adverse	High beneficial
Rural Land Use and Property	No effect	Moderate adverse
Areas of Bananas/Agricultural Land Affected	0	67.6ha – 79.6ha
Urban Land Use and property	High adverse	Low beneficial
Effects on Passing Trade	Moderate adverse	Low beneficial
Effects on Tourism	Low beneficial	Low beneficial
Indigenous Heritage	Negligible to low adverse	Moderate adverse
Non-Indigenous Heritage	Negligible to low adverse	Negligible to low adverse
Strategic Planning	High adverse	Moderate adverse
Visual Impact	High adverse	Moderate adverse
User Experience	High adverse	Negligible to low Adverse
Urban Impact	High adverse	Low adverse
Biophysical Outcomes		
Impact on Threatened Terrestrial Species	Negligible to low adverse	Moderate adverse
Impact on Koala Habitats and Movement Corridors	Low to moderate beneficial	Moderate adverse
Impact on Waterways and Aquatic Environment	Low adverse	Moderate adverse
Geology and Soils	Low adverse	Low adverse

(1) Unless otherwise stated, quantities shown are for Englands Road to the end of the existing dual carriageway highway at Sapphire.

(2) Note that the traffic predicted to use the bypass (for the Inner Bypass option) or the Upgraded Highway (for the Existing Highway Upgrade option) is expected to experience a lower crash rate than the traffic using the existing highway, due to the improved road geometry

Conclusions

As noted above, the Inner Bypass and the Existing Highway Upgrade options have been developed to satisfy the overall objectives of the Pacific Highway Upgrade Program and also the objectives developed for the CHHPS. Table 3 provides a comparison of the options against the primary objectives for the Pacific Highway Upgrade Program.

Table 3 Performance of Options Against Pacific Highway Upgrade Program

Objective	Existing Highway Upgrade	Inner Bypass
Significant reduction in road accidents and injuries.	Improvements would be made to the road geometry within this highly constrained corridor. Local and through traffic would be more effectively separated. These measures would be expected to significantly reduce crash rates and improve pedestrian safety.	The dual carriageway geometry would be designed to RTA standards for optimal safety and transport efficiency. Coupled with the significant local and through traffic separation this option would be expected to provide the best outcome in terms of crash rates.
Reduced travel times	Travel times from Englands Road to the end of the dual carriageway at Sapphire would be reduced by 1.7minutes.	Travel times from Englands Road to the end of the dual carriageway at Sapphire would be reduced by 2.2minutes.

Objective	Existing Highway Upgrade	Inner Bypass
Reduced freight transport costs	This option would be expected to result in a saving of \$0.86 per vehicle (from Englands Road to the end of the dual carriageway at Sapphire) due primarily to improved road geometry and traffic flow.	This option would be expected to result in a saving of \$1.12 per vehicle (from Englands Road to the end of the dual carriageway at Sapphire) due primarily to improved road geometry and traffic flow.
Community satisfaction with the physical development of the route	Community input would be integrated into the design at all stages of project development. Construction activities would be protracted and result in a wide range of unavoidable community disruption and inconvenience. On completion of works, community access across the corridor would be restricted, with some dissatisfaction likely due to reduced freedom of movement. Inclusion of environmental mitigation measures more difficult along this highly urbanised corridor.	Community input would be integrated into the design at all stages of project development. Construction activities would have minimal inconvenience beyond the immediate corridor area. A high level of community satisfaction is likely when the bypass is completed due to improved local accessibility. The new corridor would provide more opportunity to incorporate urban design and environmental outcomes sought by the community
A route that supports Economic Development	Introduction of major transport infrastructure would support continued regional economic development. Opportunities for access by through-traffic to facilities within the CBD would be reduced from the current situation, exacerbated by the loss of roadside parking. Direct property impacts and reduced access to many businesses along the corridor represents potentially significant adverse economic impact for Coffs Harbour. Major traffic corridor through main urban area would detract from future enhancement as business and tourist precinct	Introduction of major transport infrastructure would support continued regional economic development. Opportunity exists to promote new land use / development more compatible with a highway (eg especially North Boambee and west Korora). Changed traffic regime in CBD provides opportunities for enhanced business activity and precinct development. Removal of through traffic from main urban area would improve amenity and enhance Coffs Harbour as a tourist destination
Upgrade managed in accordance with ecologically sustainable development principles	The route maximises use of existing infrastructure and has negligible impact on rural and conservation / vegetation areas. However, significant negative impacts would occur in established business and community precincts through the main urban area of the City.	Corridor impacts on several areas of vegetation with ecological values. There is opportunity to effectively mitigate and compensate such impacts. Corridor traverses rural / urban fringe areas, much of which is subject to substantial land use change. There is scope for replanning to achieve compatible development outcomes. Enhanced traffic conditions along the existing highway would be positive for sustaining / improving the main urban area as the key business and social centre of Coffs Harbour.
Effectiveness of expenditure objectives	Project cost and funding profile likely to mean numerous work stages and overall construction period of at least 6-7 years. Higher potential for local and through traffic problems through town especially in peak periods. Benefits to road users would be realised incrementally as new sections are complete.	Bypass could be constructed free of major traffic flows and opened within 4-5 years. Road user benefits would commence immediately upon opening

From this comparison of the two corridor options it is concluded that the Inner Bypass best satisfies most of the objectives of the program.

In terms of functional transportation issues, it is estimated that the Inner Bypass would result in a 16-39% reduction in the amount of the total traffic along the bypassed section of the existing Pacific Highway including a 34-51% reduction in the amount of heavy vehicle traffic in 2021. The Existing Highway Upgrade would retain the main road traffic flows in the existing corridor but would provide separation of local and through traffic on the adjacent service roads and motorway. Of the two schemes, the greatest benefits in terms of local and through traffic movements would be provided by the Inner Bypass, which would result in enhanced highway access and movement around the city centre. It is estimated that heavy vehicle travel times would be reduced by 20% for the Inner Bypass relative to the existing situation and by 15% for the Existing Highway Upgrade. The total estimated cost from Englands Road to the end of the existing dual carriageway highway at Sapphire for the Existing Highway Upgrade is \$690M. For the Inner Bypass, the estimated cost over the same section of highway is \$280 to \$425M depending on the selected route sub-options. The road user benefit cost analysis indicated that the options provide similar economic returns. Importantly, neither option would yield good economic returns in the short to medium term.

In terms of socio-economic implications, both the Inner Bypass and Existing Highway Upgrade options would require significant acquisition of private property. The property impacts associated with the Existing Highway Upgrade scheme would mainly result from the new interchanges, access ramps and service road arrangements in the built-up part of the city centre. As a consequence, very high adverse impacts are anticipated in terms of urban land use and business activity. There would also be adverse impact in terms of community cohesion due to access restrictions along and across the amplified highway corridor. A variety of adverse amenity impacts would also be experienced by the population along the corridor. In broad terms, the Existing Highway Upgrade would cause dramatic changes to the urban fabric of Coffs Harbour along the corridor including potentially severe impacts on the form and function of the CBD. There would be no impacts upon rural land use with this option. While the Inner Bypass minimises direct impact upon existing urban land use in Coffs Harbour, there would be substantial adverse impacts on rural and rural residential areas in North Boambee, west Coffs Harbour and west Korora. The corridor would also have major implications for the development plans of North Boambee. As these plans are at the early development stage, there is still the opportunity to revise the plans to achieve a compatible land use mix along the corridor. Construction and operation of the Inner Bypass would have a range of adverse impacts on the residential communities near the corridor, most notably in the form of amenity effects like traffic noise and visual impact. Due to the available space in the new corridor, opportunities would exist to incorporate urban design features that provide visual and noise impact mitigation. Beneficial impacts are anticipated for local accessibility and amenity along the existing highway corridor, with the removal of through traffic including significantly reduced heavy vehicle movements. This would also produce potentially significant benefits for CBD land use and property, and overall business activity and tourism.

In terms of biophysical impacts, the Existing Highway Upgrade would be contained along the existing road corridor and as such, there would be minimal ecological effects. In contrast, the Inner Bypass traverses several areas of native vegetation that support important ecological functions. It is concluded that the nature and scale of potential impacts are likely to be acceptable, with apparent opportunities to effectively mitigate / compensate for these impacts (eg. provision of fauna underpasses and overpasses).

Despite the likely benefits to road users with the Existing Highway Upgrade option, it is concluded that the major adverse social impacts including community disruption, reduced amenity and severe land use and business impacts in the main urban centre of Coffs Harbour would render this option unacceptable for the local community. When considered in tandem with how the options perform

against the Pacific Highway Upgrade Program objectives (see above), the overall finding is that an Inner Bypass corridor is the most suitable means of meeting future highway needs for Coffs Harbour. As a consequence, it is considered that the Inner Bypass should be the basis of the preferred strategy for upgrading the Pacific Highway.

Future Actions

Because of the prevailing land use pressures in the vicinity of the Inner Bypass, it is evident that specific planning actions would be needed to protect the corridor from future development in the near future. Subject to identification of the preferred route, reservation of an appropriate strip of land would need priority attention. This would also necessitate review and replanning of some parts of the proposed new urban release areas. These actions could provide an opportunity to examine compatible urban / business land use scenarios adjacent to the Inner Bypass corridor.

The Strategy will be on public display in Coffs Harbour and Woolgoolga. The dates and locations will be advised in the Community Update and in Press notices. The displays contain large-scale maps of the Strategy options showing the proposals in greater detail.

Community feedback will be considered as part of the process to select a preferred option. Each option will be compared to identify the route that achieves the best balance between social, ecological, engineering and economic factors while providing for the future needs of road users and local communities.

A workshop with technical and non-technical participants, representing a range of government, council and community interests will be held. The recommendations arising from the workshop will be an input to the subsequent evaluation of the strategy options.

A Preferred Options Report will be prepared to document the evaluation of the options. A recommendation will then be forwarded to the NSW Government for consideration.