

4. Potential Highway Corridors

4.1 Overview

This section provides a summary of the highway corridor investigations that have been completed as part of the Coffs Harbour Highway Planning Strategy (CHHPS). The planning effort on the corridor options was prompted by CHCC and until late 2003 was managed by a Steering Committee comprising representatives of DIPNR (then Department of Planning), CHCC and the RTA. Following Council's adoption of its preferred corridor in late 2003, the Steering Committee agreed that it could no longer manage the development of the Strategy and disbanded. The RTA then undertook to finalise the Strategy in association with DIPNR.

Technical investigations to identify and assess potential corridor options commenced in early 2001 and culminated in February 2004 with the announcement that *"the Strategy preferred by the RTA and DIPNR for Coffs Harbour is a bypass located generally within the Inner Corridor"*.

There were several phases of investigation due to the variable and separate focus on the southern (Coffs Harbour) and northern (Sapphire to Woolgoolga) sections of the Strategy area as well as the agreement by the RTA to examine additional corridor options put forward by CHCC and community interests. In the course of these investigations, parts of some corridors were examined on more than one occasion because they were included in new or revised corridors.

An initial phase of investigations produced five very diverse corridors and there followed subsequent phases which focused on the new and revised corridor options. Each of the corridors is summarised below with an account of the main issues and findings that lead to the eventual adoption of the preferred corridor option for further investigation and route planning.

4.2 Initial corridor identification

The initial phase of work on the Strategy included identification and assessment of broad corridor options for the possible future upgrading of the Pacific Highway that were spread across the LGA. An announcement to advise of commencement of the community involvement activities for the Strategy took place in September 2001 and this included release of several supporting technical working papers.

The study area at that stage extended from south of Sawtell to north of Woolgoolga and as far west as Coramba. It was recognised that the identification of potential corridor options for the northern (Sapphire to Woolgoolga) section would in part depend on the outcome of the planning for the southern (Coffs Harbour) section.

The primary objective of this phase of the study was to identify if and when a bypass of Coffs Harbour would be justified in the future and, if so, the most suitable corridor or corridors to take forward to the next planning and design stage. These decisions would be made on the basis of a range of criteria including environmental, social, engineering, traffic and economic factors

Coffs Harbour Bypass Corridor Options, Working Paper No1 Preliminary Concept Design Report was released in March 2002 and it provided information on the potential bypass corridors, including preliminary concept design, scope definition and strategic cost estimates for three broad corridors identified by the RTA. The three corridor options that were the focus of that stage were:

- Inner Corridor – a bypass approximately 11km long skirting the western edge of the existing Coffs Harbour urban area

- Central Corridor – a longer corridor option of approximately 25km passing by the outskirts of Coffs Harbour, and providing a more westerly bypass of the town and surrounding area
- Outer Corridor – an even wider bypass at its southern section and sharing the same northern section as the Central corridor, approximately 31km long

Information about the expected traffic function and economic performance of each corridor was provided in *Working Paper No2 – Traffic and Economics Report* and comparative information about key planning and ecological constraints was provided in *Working Paper No3 – Environmental Planning Overview Report*.

A plan showing the general location of the initial corridor options is included as Figure 4.1.

In addition to these options, further corridors were raised by the community as part of the various community involvement activities that followed the September 2001 launch of the Strategy. These options included:

- Far Western Corridor - a bypass that traverses the Orara Valley and rejoins the existing highway in the north, either at Halfway Creek or to the south of Grafton.
- Existing Highway Upgrade - a further, long-term development of the existing highway corridor in lieu of a bypass.

Key assessment findings

The range of expected traffic volumes to the south and north of Coramba Road for each bypass corridor in 2021 indicated that generally the further west the corridor, the less traffic it would attract. This is consistent with surveys that confirm a large proportion of highway traffic is locally generated. The Inner Corridor attracts significantly more traffic as it provides for more use by local traffic.

Strategic cost estimates were prepared for each of the three original bypass corridors and an indicative estimate was developed for the far-western corridor using average cost per kilometre rates for major highway construction. Given the variable lengths and alternative connection points for this corridor, a wide range of costs resulted.

The cost benefit analysis indicated that there is no apparent economic merit of investing in a major bypass for about 20 years or more. Furthermore, the results indicated that the *Inner Corridor* is the only option likely to provide net benefits in the long term planning horizon. By contrast, the relatively high costs and small traffic attraction of the Central, Outer and Far Western corridors makes them unattractive economic proposals, even in the very long term.

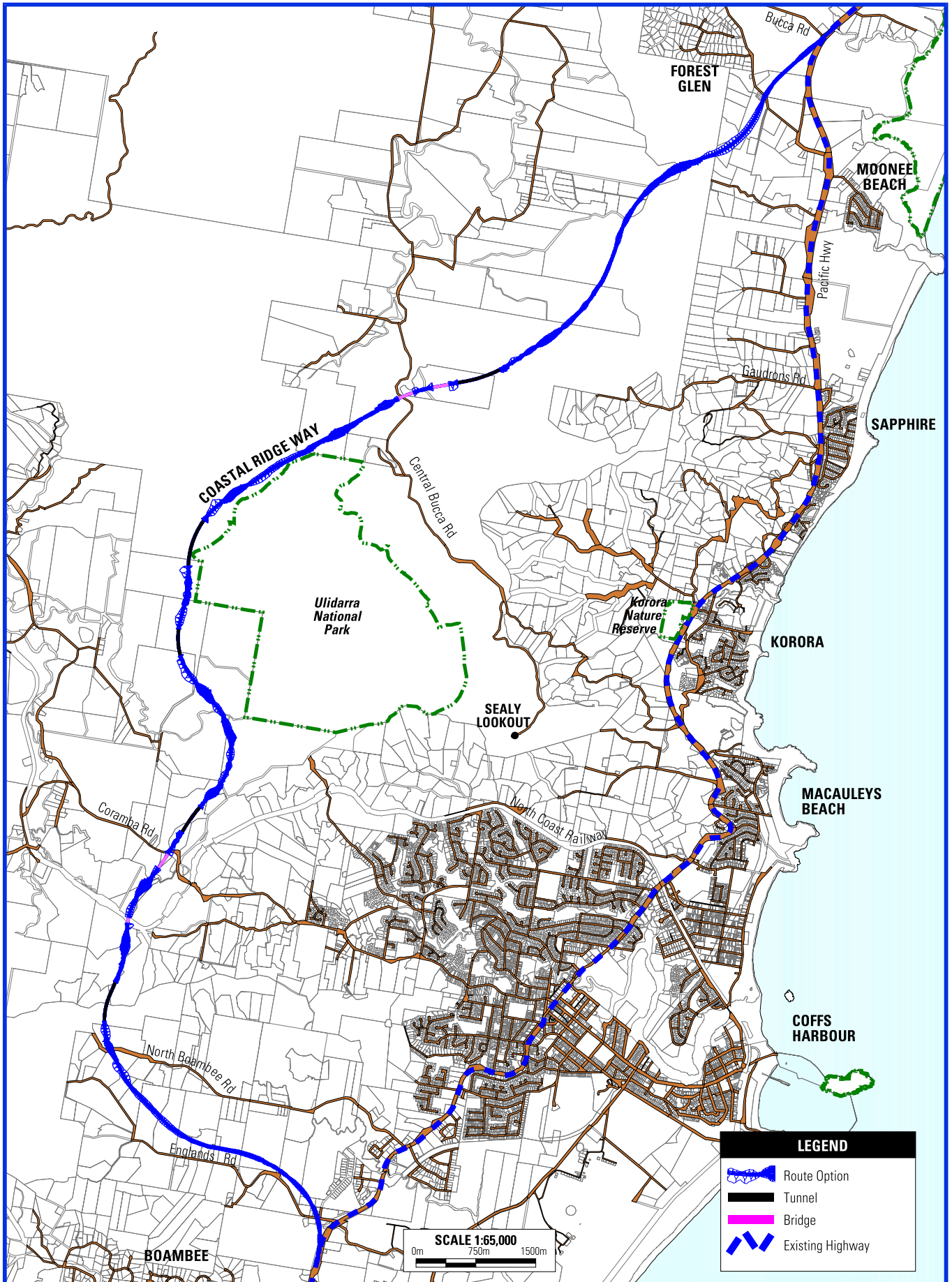
The Far Western, Outer and Central corridors are severely constrained in terms of known and potential habitat for threatened species and severance of numerous major and lesser wildlife linkages. Protective measures such as fauna underpasses, revegetation and the provision of compensatory habitat are unlikely to be effective enough to substantially reduce potential impacts of these options. Given the high level of ecological impact obtaining consent from relevant authorities would be difficult. By contrast, the Inner Corridor has relatively low impact on biodiversity as it passes through largely cleared lands and any adverse effects on wildlife linkages could be mitigated.

Conclusion

It was found that all options would involve significant property acquisition and the Inner Corridor would impinge more on urban release areas which would necessitate a review of Council's planning, while the other options further west would impinge more on rural and agricultural areas. The Inner Corridor was clearly the preferred option in terms of biodiversity implications.



FIGURE 4.1
INITIAL STRATEGY
CORRIDOR OPTIONS



In the overall assessment, it was concluded that the Inner Corridor was the only one that represented a feasible long-term investment in terms of relative costs and road user benefits. The comparative assessment showed that the Central, Outer and Far Western corridors could not be justified in the adopted planning horizon and, as such, they were not worthy of further investigation.

On the basis of this phase of work, the Steering Committee resolved that work on the Strategy should proceed to develop routes within the Inner Corridor and compare the identified options with various upgrading scenarios for the existing highway through the City.

4.3 Peer Review

Following the release of findings from the assessment of initial corridor options in March 2002, there was a high level of concern expressed in the community about the implications of dismissing all but the Coastal Corridor options (ie. the Inner Bypass and the Existing Highway Upgrade).

CHCC responded to the situation by engaging Arup Consultants to conduct an independent peer review of the findings made by the project team. The resultant report *Coffs Harbour Planning Strategy Highway Upgrading Options, Peer Review* was released in September 2002. The review concluded that, *"the Inner Corridor is the preferred of the options for a bypass of Coffs Harbour and that the Planning process has provided for the delivery of the best option for the Coffs Harbour local community"*. The Review also recommended some actions or tasks which could be undertaken during the next stage of the strategy to improve transparency of the process and community consultation.

On the basis of the outcomes from the peer review, the Steering Committee reaffirmed that the outer and central corridor options for a bypass of Coffs Harbour were "ruled out" and agreed to proceed with development of the highway strategy generally in accordance with the previously defined planning process. Independently, CHCC initiated a separate series of community forums about the highway in order to address the issues raised in the peer review.

4.4 Coastal Ridge Way

Background

The Coastal Ridge Way (CRW) traverses the rugged Coastal Range to the west of the Coffs Harbour urban area and extends for about 38 km from Englands Road in the south to Arrawarra in the north (refer Figure 4.2). It was originally identified by members of the community and was prompted mainly by concerns regarding the perceived adverse social impacts associated with other highway options that traverse through or closer to the Coffs Harbour urban area. The CRW was also developed so that it could connect to Option A in the northern (Sapphire to Woolgoolga) section of the Strategy area.

In the context of the overall Strategy, the CRW is generally located in the same part of the study area as the previously investigated Central Corridor and it therefore has a similar transport and traffic function, including the opportunity to link with the Option A corridor in the northern section of the Strategy area. The notable distinction between the two is the different alignment in the southern part through the North Boambee – Karangi area and the consequently very different engineering, cost and socio-economic implications. When CHCC subsequently adopted its Preferred Corridor, the CRW with Option A, formed the eastern boundary of that corridor.

With the high level of expressed community support for the CRW and in response to a request from CHCC, the Steering Committee agreed to conduct a review of this western bypass corridor in parallel with investigations into the Inner Bypass and Existing Highway Upgrade. The investigations were reported in the *Review of the Coastal Ridge Way Proposal* (Feb 2004) and it examined the key physical features, cost, traffic and economic performance of the CRW and assessed its impacts across a range of social and environmental planning issues.

Key assessment findings

In functional terms, the CRW proposal could potentially serve as an effective bypass of the main Coffs Harbour urban area for a substantial volume of through traffic (estimated in the range of 7,600-9,200 vpd in 2021). However, significant volumes of traffic would remain on the existing Highway through Coffs Harbour and along the northern beaches (estimated in the range of 18,900-41,300 vpd in 2021). Due to the unavoidable long steep gradients associated with the CRW proposal, the travel times and operating costs for heavy vehicles would potentially reduce the attractiveness of such a bypass option to these vehicles. On this basis, there is a risk that some proportion of the heavy vehicle traffic that would otherwise be attracted to the CRW may choose to remain on the existing Pacific Highway.

Construction of a dual carriageway through the rugged terrain along the coastal range presents significant engineering challenges. It would require up to 2.4 km of tunnels through major ridgelines along with elevated viaducts across deep valleys and over the North Coast Railway tunnel in addition to cuttings up to 45m deep and fill embankments up to 30m high. The strategic cost estimate for the CRW from Englands Road to Bucca Road indicates a cost of approximately \$860M or \$40M per kilometre, far in excess of any other NSW rural highway upgrade or bypass. With a benefit cost ratio of only 0.09 and a first year rate of return less than 1%, this route would not be economically viable in terms of road user benefits. When coupled with the limited travel benefits (due to the unavoidable long steep gradients), the analysis showed that proposal would represent a very poor investment in road transport infrastructure in NSW.

The CRW is generally well removed from the existing more populated urban precincts of Coffs Harbour and does, in general, fulfil the objective of minimising social impacts in those areas. However, it would involve a range of adverse socio-economic impacts spanning property, business, amenity and social issues mainly at the southern end and within the Bucca Valley.

The CRW proposal would require the removal of about 90ha of native vegetation with clearing up to 200m wide in locations where wide cuttings and embankments are required. The investigations found that the proposal would result in unacceptable impacts on protected threatened species and habitats (including koala habitat) and important ecological communities. In view of the magnitude of biophysical impact, there were doubts regarding the ability of the proposal to achieve effective ecological impact mitigation, even with the adoption of best practice measures. The CRW corridor (including the Option A northern part) affects sections of Sherwood Nature Reserve and protected areas within State Forests and the related statutory requirements would make it difficult to obtain environmental approval for the proposal.

Conclusions

The investigations concluded that the CRW proposal is contrary to the principles of ecologically sustainable development, and does not merit further consideration as an option for the upgrade of the Pacific Highway due to:

- the significant topographical constraints and engineering challenges associated with locating the CRW outside the coastal plain and into the steep and hilly terrain associated with the coastal range
- the poor functional performance of the proposal
- the high cost and poor economic viability of the proposal
- the significant adverse impacts on flora and fauna