

Supplementary
Submission
No 58a

INQUIRY INTO PACIFIC HIGHWAY UPGRADES: COFFS HARBOUR

Organisation:

Name: Mr E.J. Armstrong

Telephone:

Date Received: 17/11/2005

Subject:

Summary

The Honourable Jenny Gardiner, MLC
NSW State Parliament House, Macquarie St, Sydney, NSW 2000.

Dear Madame,

The recent visit to Coffs Harbour by Mr. Tripodi, has prompted me to make a submission to him for his serious consideration with respect to a proper long term bypass for Coffs Harbour, that I have been contemplating over many, many years and have now plotted.

I submit to you a copy for your Committee's consideration.

The submission shows a route that provides a "genuine bypass" clear of the present and future urbanised development of this well populated coastal strip. By any dictionary definition a **bypass is a road, located, designed and constructed to allow through traffic to go around any town or city to avoid driving through it.** This is the Collins Dictionary definition I shall use and I pray that your Committee use it as well.

The Pacific Highway at present for some 50 km between the Bellinger River and Corindi is generally within close proximity to tidal waters and the ocean shore which means that there are very severe and restrictive controls that any construction would breach, unless Government elects to over-ride its own legislation and face the odium and legal challenges such a process is likely to bring down upon government's head.

The route shown on my plan is clear of **all** those complications, can be constructed without any interference to, or from, existing highway traffic except for the connections at each end. My route does pass through some Carr declared National Park but I deal with that at Paragraph 10 or thereabouts of the introduction to my main submission.

Although in total, it includes all the Pacific Highway from Repton to Halfway Creek, and is therefore a little longer than the RTA's present proposal, it has the great advantage of easier construction, clear of highway traffic, clear of settlements and residences, and avoidance of major earthworks cuts, fills and tunnels. Therefore it would per kilometre, be much cheaper than the RTA proposal, by an estimated 30 to 50 % if "engineered properly". The climb up to below Tucker's Nob puts all the hard bits in one place.

I make this statement about "engineered properly" in the light of experience in my career. One of my Uni classmates ended up as Chief Engineer Highways in the old DMR. He resigned and joined Statewide Roads [SWR] some years ago when changes in DMR abolished the title of "Engineer" and they became RTA. He was part of the State wide Roads team that negotiated one of the first, Build Own Operate [BOO] schemes in Sydney with the State Government.

For this BOO scheme, State Government RTA [previously DMR] estimated its cost at about \$550 million and insisted that SWR have financial backing for that amount before


E. J. ARMSTRONG, B.E., F.I.E.Aust., C.P.Eng., N.P.E.R.

they let them the contract. Having awarded the contract to SWR, my classmate was given the task of building the project, and as he put it to me over lunch, he set to work and "engineered the project" and built it for \$250 million. That is what I mean by engineering the project properly. The difference in amortisation costs between the finance for a negotiated \$550 million job and an actual of \$250 million gave SWR a handsome profit.

My 46 years of broad Civil Engineering experience can be easily supported by my brief CV if it is of interest to you.

I do ask that you and your Committee spend an hour to examine this submission, as I believe that the suggested route would overcome the majority of the opposition to the RTA proposals including that from the Sikh community of Woolgoolga who have been in the area since 1856. The Sikh's and other's opposition is much in the news at present.

Yours faithfully
E. J. Armstrong.

A handwritten signature in cursive script, appearing to read 'E. J. Armstrong', with a horizontal line underneath.

Tues 15th November 2005

A PROPER BYPASS FOR COFFS HARBOUR AND WOOLGOOLGA AND ALL SETTLEMENTS BETWEEN THE BELLINGER RIVER AND HALFWAY CREEK

This proposal is a solution to the development of a bypass for the Coffs Harbour coastal strip. It is I believe the most economical and longest term solution, that would make provision for traffic for at least the next 50 to 100 years and it ensures a route with a very positive cost benefit and good result when amortised over 50 to 100 years. A Coffs Harbour bypass so called was first addressed towards the end of the 1939 – 1945 world war in order to make provision for a route that did not pass through the CBD for reasons of defense.

I grew up in Coffs Harbour on the North Coast of NSW. I now have some 46 years of very wide and practical experience in civil engineering, construction, investigation, geological and environmental assessments, hydrology and surveying, mainly in NSW, but also throughout Australia and overseas, in places such as the UK, Kuwait, Solomon Islands, Papua.

I believe that I can in all honesty claim to have an intimate knowledge of the area from Newcastle to the Queensland border and westwards to the western fall of the Great Dividing Range.

I have also been much involved with community consultations since 1975 with respect to many issues in this area and am a Chamber of Commerce delegate to the Coffs and Moonee CFG's for the current bypasses proposed by the RTA in those areas which hug the coastline. I was also a member of the 1983 to 1985 Chamber of Commerce sub committee that analysed at no cost to Government bypass possibilities.

That committee was made up of a highly qualified team consisting of :-

W. C. Ames A.A.S.A.
E. J. Armstrong B.E., M.I.E.Aust.
R. A. Bosler, L.S., M.I.S. (Aust), A.M.R.A.P.I.
D. G. Jeffery, B.Sc., (Hons), M.Sc.

I seem to be one of the few people still in easy accessible possession of the working papers, reports and plans produced by that committee, even though they were distributed to some 50 people including many Government and semi Government organisations, and politicians and newspapers. I have that listing.

The conclusions reached then, are still valid today except that the time for the Bypass's construction has been well and truly reached. A recent and private 24 hour count of large trucks travelling both north and south was made at the Ballina Roundabout. Two axle trucks, Pantechnicans and buses and were not counted. In 24 hours there were 1600 heavy vehicles or near enough to 1 every minute. It was done in about June two years ago.

For guidance, I think it important to present a summary of some of the background and thoughts that have developed since my first association with a Coffs Harbour bypass that dates back to the first route chosen and surveyed by the DMR's Surveyor Dick Rushton in the mid 1940's, and for whom I worked for 5 years until January 1952.

The attached draft route has been prepared over many weeks and takes into account, acceptable gradients, construction conditions, geology, the cost of land purchase as part of the construction costs, the amount of bulk earthworks bearing in mind that 5 metre deep cuts in the weathered surface soils are cheaper and easier than 50 m cuts in hard rock or tunnels as proposed in the RTA route, and are more environmentally, socially and economically acceptable. I do not present detailed costings of these issues as they are better done in relation to, and using similar bases, as the RTA costings for their proposal.

Be careful of "estimates". In engineering, there is a saying to the effect that if you tell an estimator which scheme you prefer, he can make that one the cheapest. Also most Engineering Consultants are paid fees as a percentage of the project cost. Therefore, the greater the cost of the project, the greater is their fee.

I have not accepted, that putting a road through remote National Park land recently gazetted is sacrosanct. I have examined many roads through such protected land and am quite satisfied that roads can be built through them without endangerment of the flora and fauna. More importantly, with a road through the park, the public being asked to finance their preservation is better able to see what it is that the public are being asked to finance.

In fact, it is clear, that roads can be built in such a way, that better access to these areas for the public is a good thing, and then, it is possible to show the public, what it is, that the NPWS claims to be protecting for them. It is a demographic fact that the population is aging. It is also erroneous thinking to believe as NPWS do, that wilderness, is best protected by stopping all access to it, except for fit bushwalkers prepared to tramp into and to camp in the bush for

some days, with its leaches, ticks and bunyips, The older public do not like to pay to protect something they are never allowed to see, let alone enjoy.

For much greater economy, lesser capital cost and protection of flora and fauna, I have proposed well separated roadways so that when both are completed there will be separated roads for traffic going north and for traffic going south. Building two 15 m wide one way clearings for roads separated by say a 50 to 100 m wide forest, are to be preferred to a 40 to 50 metre wide clearing for a "Motorway" type road. **It also provides an end result that is more aesthetically pleasing, and is more flora and fauna friendly and cheaper per kilometre than wide monolithic environmentally unfriendly RTA proposals.**

Those in decision making positions should also remember that Engineering, Architectural and other Professional consulting fees are usually a percentage of the capital cost. This creates what might be an ethical problem and serious conflict of interest. Six lane motorways cost a lot more than two x two lane separated roads due mainly to greatly increased earthworks and clearing for motorways. Therefore the consultants receive much more in fees for six lane motorways than for two lane separated roads that cost less than the motorway.

The two x two lane separated roads also have the benefit of more quickly putting into service the first two lane road so that return on investment takes place earlier while the second road is being built some say 50 to 100 metres away.

COMMENT ON THE BACKGROUND and CONSTRAINTS [Not exhaustive].

1. The need for a Coffs Harbour bypass was recognised over 65 years ago when the Pacific Highway was all gravel and very winding.
2. The route surveyed from Repton to Korora in the 1940's was never built.
3. About 12 years ago I was engaged by one of Australia's major highway building contractors to assist their Special Projects Manager with his research into the announced duplication of the Pacific Highway between Newcastle and the Queensland border. He reported to me that his approach to the NC Manager for RTA with a proposal to construct a BOOT bypass for Coffs Harbour met with a negative response with words to the effect "the Coffs Harbour bypass is in the too hard basket, and there are so many stretches of the highway still to be duplicated that are easier, that I will be long retired before we have to worry about Coffs Harbour."
4. This approach was further confirmed at CFG meetings where I asked when was it likely that construction would start. On several occasions the

answer was the same. Not before 2025. I therefore queried the reason for some \$10 million of expenditure now when blind Freddie could see that what would happen in 20 years time was anyone's guess.

5. By any dictionary definition a **bypass is a road, located, designed and constructed to allow through traffic to go around any town or city to avoid driving through it.** This is the definition I shall use.
6. The proposals so far put forward by the RTA do not go anywhere near to meeting such a definition.
7. What is more, the increase in truck traffic since the completion of the Chinderah Bypass now belches forth a greatly increased volume of carcinogenic fumes, into our suburbs and schools such as Korora Primary.
8. Some contacts at Ballina undertook a recent 24 hour count at Ballina from their house on the highway at the corner where the roundabout is as you enter Ballina from the south. They counted only multiple axle trucks so that single axle trucks and furniture pantechicians were not counted
9. That count a year or so ago, was 1600 trucks in 24 hours or the equivalent of one truck every 66 seconds. It was recorded that very often there were 4 or 5 trucks nose to tail in convoy.
10. There is great benefit from discharging hot house gases and carbon particles, both essential for tree growth, **into forested areas.** Very few people realise that 5,000 square metres of Australian forest has the capacity to absorb and utilise each year all of the exhaust products emitted by a Toyota Prado travelling 25,000 km in that year.
11. This very fundamental truth is one of the great facts overlooked, in the pushing upon us of the Kyoto Protocol. It is also still to be recognised that this concept should be a prime driver for forests along our highways and in areas near towns and cities that receive from prevailing winds the hot house gases produced from those areas of habitation.
12. The route proposed herein meets the above definition of a "True Bypass" and a "true bypass" has been the prime constraint to the route selection.
13. The cheapest land for the route is land owned and controlled by the State or Federal Government as opposed to the resumption of land owned by farmers producing food for the nation, or citizens and taxpayers. This lower land cost content was confirmed three times in reply to questions at

the CFG meetings I attended in respect of the RTA's choices for a Coffs Harbour bypass.

14. CHCC has 50 % of its local government area given over to State Forests and National Parks. The Sinclair Report prepared under instruction from Bob Carr for his Native Vegetation Act of December 2003, indicated that only about 3 % of NSW was forested. The NSW Land and Environment Court has set a figure of between 6% and 7% as needed for open space in or adjacent to urban areas for passive recreation. It could be argued that the citizens of this area who have 50 % of the LGA dedicated to forests, carry an excessive burdensome part of NSW forest for passive recreation.
15. Access to these forests is poor and a highway such as is suggested herein would greatly improve access for locals and visitors.
16. To make rail freight attractive and hopefully remove much freight from the Pacific Highway, it goes without saying that the rail line from Sydney to Brisbane along and through the coastal population centres must be straightened and duplicated. This is of course another big red hot political issue being dodged. Even so, even if it is addressed by some Government, it is reasonable to consider that car and truck transport will be with us for the foreseeable future [say 100 years].
17. Demographically over 90% of Australia's population lives along the coast of the country and the pressures for continuance of that irreversible trend are increasing. High house prices in Sydney [Ian McFarlane article by David Uren in the Australian] make it certain that Main roads must be designed to be capable of servicing that demand to live elsewhere than Sydney, by using projection thinking for the next 100 years.
18. Locating, designing and building roads for **existing traffic only** is wrong.
19. All economies can only be made more efficient by more and more road communication efficiency. **Particularly is this so in Australia.** The same has been found and **proven by proper data** elsewhere. In Canada it has been quantified and costed and provides irrefutable proof of the efficacy of this policy.
20. In the provision of all community service facilities such as water, power, sewer, communications and roads it is fundamental to make risk analyses, to take into the considerations, their susceptibility to disruption by fault, accident, terrorist attack or heaven forbid, conflagration. In this day and

age, "Risk Analyses" clearly reveal high vulnerability for such infrastructure along the eastern seaboard.

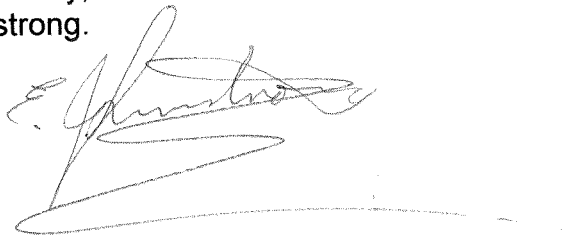
21. The existing highway through the LGA of Coffs Harbour is so highly vulnerable to any of these disruptions that it is like a time bomb waiting to explode. Parts of the existing Highway are without any alternative route or detour capable of carrying heavy truck traffic, except for the New England Highway far to the west.
22. The physical geology created by the major east-west Crossmaglen Fault has created a barrier that requires about a 600 to 700 m climb from 20 m AHD at the Bellinger River and 300 m at the foot of the climb at the southern boundary of Tucker's Nob State Forest. This range marks the watershed between the Clarence and the Bellinger rivers. At a maximum gradient of 5% this requires a climb length of 6 km from AHD 300 m to AHD 600 m which is quite achievable or 7.5 km for a gradient of 4 %.
23. The land just to the north of Tucker's Nob at a height above sea level of about 600 metres slopes gradually down to about 60 m at Halfway Creek over a distance of about 64 km along my proposed route. This eroded peneplain presents a landform with few construction complications from Tuckers Nob to Halfway Creek. The major structure would be a bridge across the Orara River, just upstream of the old existing low level wooden bridge at the Bluff on the Glenreagh to Grafton Road. The average gradient is less than 1 % to Halfway Creek with no steep sections.
24. There is in my opinion considerable logic and merit to confining the major physical constraints to as small an area as possible in preference to spreading such construction, traffic control and social problems over a greater distance and several locations such as occurs with the RTA and "Coastal Ridgeway" choices where major earthworks are required within the townships of Coffs Harbour and Woolgoolga without listing the intervening settlements. The climb up to below Tucker's Nob from the Bellinger River is at first blush a bit tricky but not engineeringly or environmentally impossible with the skills available in this day and age.
25. **It should not be dismissed as impossible but looked upon as a challenging opportunity to which some politically supportive person could attach their name.**
26. Traffic counts going back as far as 1980 show quite conclusively that only 17% to 20% of the traffic that goes past the Coffs Harbour Hotel is in fact "through traffic". The rest, 80 to 83 %, is locally generated.

27. There are still many sections of the Pacific Highway between Newcastle and Brisbane that are only two lanes, and carry that through traffic with acceptable safety when the alignment and construction is adequate.
28. These existing two lane sections, have, and will always have, the disadvantage under the present system of construction and traffic management, the fact that a white painted line is totally inadequate as a barrier to protect two objects from hitting each other, when hurtling towards collision at a fatal impact speed of 200 km per hour or more.
29. A two lane road properly designed, constructed and maintained can be built through **forests and national parks** with minimal disturbance to, and effect upon, flora and fauna. Many such examples exist.
30. A two lane road is much cheaper to build and maintain, than a motorway style, having four lanes with two break down lanes and some sort of median strip. Present medians range from white lines as at Repton, to 5 metres of grassy shrubs to steel cables that act as guillotines.
31. Simple logic suggests that a two lane road sited in areas clear of habitation **such as is proposed**, can be located and built without interruption. **This is a big money saver in construction compared to other proposals.**
32. When the first two lane road has been completed, along the route proposed, the 17% to 20% of through traffic can be diverted onto it, and at the same time construction can be started, of another nearby two lane road that roughly parallels the first road but well clear of it by say 50 to 100 metres which is forest. When completed, there is then a divided highway of high safety, relaxed driving and environmental superiority.
33. The existing highway **MUST** be widened to 4 lanes and improved from Pine Creek to the top of the range north of Red Rock and be classified as a main arterial road with unlimited access and not with limited access as it is at present and is proposed. Further limitations on access are proposed by RTA. These are unacceptable for social reasons. This widening from a construction viewpoint is not a big deal. It could be done with small construction groups of say two excavators, one digging and loading, and one spreading and trimming, 2 trucks and a roller **with minimal disturbance of existing traffic using the existing road profile as the long section. Experienced Engineers and Foremen are essential.**

34. According to its website the RTA has a responsibility to provide money to support construction of such arterial roads and local ring roads such as Hogbin Drive to relieve traffic from the highway. There are indications that funds are being diverted into payment of HO salaries and recovery of past superannuation largesse and losses in overseas investments, for the State Government Departments.
35. In speaking to people involved in the interstate transport industry it is clear that a road that may be some kilometres longer but avoids the thirteen sets of traffic lights and the 80 % of locally generated traffic along the existing route will be used by through traffic.
36. After stopping at a set of traffic lights most trucks have 18 gears to move through to regain speed. This leaves behind a trail of generated carcinogenic fumes that is unacceptable when traversing all these gear changes.
37. Therefore to climb from a height of 100 metres just south west of Crossmaglen on the existing highway to 700 metres below Tuckers Nob [ie 600 metres of height gain] that section of road will have to be 10 kilometres long for 6%, 12 kilometres long for 5% and 15 kilometers long for 4%. To argue that such a climb is fuel costly, is not factually accurate.
38. Fuel use is more excessive when negotiating 15 sets of lights and 20 changes in speed zones than when travelling a road free of red lights and numerous speed zone changes. On top of that, all through traffic irrespective of the route ends up at Halfway Creek and has to make the same climb by whatever route, so why not do it at one location. From Tuckers knob to Halfway Creek is a doodle to drive and to construct.
39. The present computer model used to assess route viability has fundamental flaws. Two such flaws are 1) the weight given to the usage factor by assuming that extra distance and therefore reputed fuel consumption are main factors which reduce usage, and 2) this claim is without making any allowance for a possible 13 stops at lights, and changing through up to 18 gears at each light and the resulting inefficiencies and social unacceptability of the carcinogenic burnt fuel pollution.
40. It is preferable that highway gradient does not exceed 6% or 6 metres of rise in 100 metres of horizontal difference which is the same as 60 metres per kilometre. It is preferable therefore to aim at 5% or better 4% so that hairpin bends are more negotiable.

41. From a construction point of view the route suggested passes through sedimentary rock well suited to road construction. Range Road runs through old conglomerate that with the addition of 2.5 % of stabilising additives such as cement or one of the several more construction friendly additives which are not as time dependent as cement, for incorporation and placement or of 5 % of sand. North of Timbertop sandstones are to be found where construction is as straightforward as construction is likely to get.
42. Off roads to Coffs Harbour can be at the existing main roads crossed.
43. A well tree lined route allows the trees to absorb carbon and carbon dioxide and monoxide which the trees need for growth and conversion to oxygen and water vapour [rain] which is a large plus environmentally
44. I commend the proposal to your consideration as a serious and thought through approach based upon planning for 50 years from now.
45. As a Civil Engineer with 46 years very practical experience who believes that the decision as regards the choosing of a route for proper bypasses of Coffs Harbour and Woolgoolga is as major and important a decision as was the construction of a tunnel under Sydney Harbour, I commend this proposal for serious consideration and as a long term solution.
46. Should you wish to discuss the proposal in any way please feel free to contact me.

Yours Faithfully,
E. J. Armstrong.

A handwritten signature in black ink, appearing to read 'E. J. Armstrong', with a long horizontal flourish underneath.