

Submission to Infrastructure Australia re Wollongong land transport

Introduction

The accompanying submissions to the AusLink draft corridor strategy and to the House of Representatives Standing Committee on Transport and Regional Services (the Neville Committee) Inquiry into the Integration of regional rail and road freight transport and their interface with ports were based on research conducted at the University of Wollongong. This research was supported, in part, by the former Cooperative Research Centre in Railway Engineering and Technologies (Rail CRC Project 24; rail transport energy efficiency and sustainability). Buses, although important, are not included.

In 2008 the Rudd government released the 2007 revised Sydney Wollongong corridor strategy. The revised strategy, like the draft one, mentions the Maldon Port Kembla Railway. It is trusted that consideration can be given by Infrastructure Australia to the case for completion of this railway.

It is suggested that three issues warrant more attention than given in the final Sydney - Wollongong strategy by Infrastructure Australia. These are:

- * external costs
- * reduction of carbon pollution, and
- * reduction of dependence upon imported oil.

External costs are conspicuous by their absence in many transport reports. This is despite the attention given to external costs as part of AusLink project assessment in the *National Guidelines for Transport System Management In Australia* released in 2004 by the Australian Transport Council. A second edition was issued in 2006. As these guidelines (at auslink.gov.au) "*focus on land transport and provide a standard framework, including processes, methods and tools to assist and guide transport planning and decision-making across Australia*" it is reasonable that external costs be fully taken into account in formulating recommendations for the funding of major projects.

Energy efficiency and oil vulnerability issues affecting the transport of people and freight are identified in a report released 7 February 2007 of the Senate Rural and Regional Affairs and Transport Committee from the Inquiry into Australia's future oil supply and alternative transport fuels. Recommendation # 7 of the 2007 report stated "*... that corridor strategy planning take into account the goal of reducing oil dependence ... Existing Auslink corridor strategies should be reviewed accordingly.*"

The report also notes *that if there is a long term rise in the price of fuel, this will favour rail because fuel is a greater proportion of costs for road transport. This may suggest a need to increase the pace of catchup investment in rail infrastructure.."*

Since 2006-07, the case reducing dependence on imported oil has been strengthened due to oil prices trending upwards to July 2008.

Given rail's superior energy efficiency over trucks in moving line haul freight, it is suggested that more attention should be given to rail proposals that have demonstrated capacity to reduce dependence on imported oil. This will have the added benefit of not only reducing air pollution but also greenhouse gas emissions.

The Neville Committee's 2007 report *The Great Freight Task: Is Australia's transport network up to the challenge?* outlines Australia's growing land freight task. It also gives numerous examples of inadequate transport infrastructure.

No fewer than 43 port access issues are identified. The port access issues include Port Kembla and the rail issues raised include Missing rail links (eg Merrygoen – Gulgong in NSW and Newlands North Goonyella in Qld); also Maldon Port Kembla in NSW and the Wentworth deviation as one of three NSW Main South rail deviations. In the Committee's view that *"... the greatest need for Australia is the reconstruction and realignment of the main freight networks."*

This could well extend to the existing Sydney Wollongong railway in the section between Waterfall and Thirroul. In 1998, the NSW Government proposed construction of a long tunnel plus a surface route to replace the present route. It was subject to a subsequent study and all but abandoned. However, there is scope for two smaller tunnels near Helensburgh which would allow reduce the point to point distance by up to three kilometres (at the expense of steeper grades) for passenger trains and reduce the transit times.

Wollongong has large numbers of heavy trucks hauling coal to the Port Kembla Coal Terminal, currently running at about 5 million tonnes per annum (mtpa) on public roads, with proposals to lift this amount up to 10 mtpa. The original consent was for 2 mtpa and even now, this is generous when compared with all other coal loaders in Australia. The impacts were well summarised in 1990 by a NSW Govt. Coal Development Strategies Industry Task Force report (page 59): *"Road haulage has significant community costs including noise and dust pollution, increased energy usage, increased road maintenance, safety hazards, negative effects on tourism and complaints from local residents"*.

A Submission re SYDNEY WOLLONGONG draft AusLink Corridor Strategy

1. Introduction

The draft Sydney Wollongong Corridor Strategy is helpful in identifying many issues relating to present and projected demands in moving people and freight between Sydney and Wollongong.

At the outset it is difficult to understand the omission of Rail Corp as one of the participants of a *'collaborative initiative'* that comprises DOTARS, the NSW Department of Planning, the NSW Roads and Traffic Authority (RTA) and the NSW Ministry of Transport. This omission is even more difficult to understand given that Rail Corp is both a track owner and train operator, whilst the RTA for its main part is not a road operator.

The demands on the existing road and rail network will be compounded by the further development of Port Kembla and an expected growth in the number of people commuting between Wollongong and Sydney and also between Wollongong and Campbelltown/Western Sydney. The projected *"rapid growth in corridor freight"* will also pose additional challenges.

In turn, this leads to the identification of a number of short term priorities. The draft strategy also notes that completion of the Maldon Dombarton line could play a future role. This would be as part of a Maldon Port Kembla railway.

The draft strategy identifies (p13) the Mount Ousley Road is already at capacity in the morning peak (AADT 34 500 in 2003 including about 5500 heavy vehicles), there is congestion at times between Heathcote and Jannali, and the rail line through Sydney cannot be used by freight trains for at least seven hours per day. These constraints will become more severe over time, with environmental and social impacts likely to be accelerated once cars commence to be landed at Port Kembla.

In granting approval for the expansion of Port Kembla, the NSW Government appeared to take the line that the existing road and rail infrastructure would be adequate. This view was questioned by a NSW Parliamentary State Development Committee examining NSW ports in 2004-05. The final report of the State Development Committee in relation to the Inquiry into Port Infrastructure in New South Wales released 17 June 2005 noted, inter alia, comment for and against completion of the Maldon Port Kembla railway. The NSW Committee made two related recommendations:

Recommendation 12. *That following the anticipated transfer of general cargo stevedoring to Port Kembla in 2006, the NSW Government re-examine the freight task out of Port*

Kembla to ensure that the anticipated increase in freight traffic is supported by the necessary improvements in road and rail infrastructure.

Recommendation 13. *That the NSW Government consider the feasibility of expanding rail infrastructure into Port Kembla, including consideration of the Maldon to Dombarton line, in conjunction with the AusLink program.*

These recommendations were noted (page 40) of the 2006 Infrastructure Action Agenda of the Australian Logistics Council. It is suggested that as a matter of record, these recommendations be noted in the final corridor strategy.

2. External costs

The final strategy should also address the question of external costs. Such costs are conspicuous by their absence in the draft report, and probably reflect a failure to have them included in the term of reference. The City of Wollongong has paid dearly in previous decades for over-reliance on road haulage of coal. The penalties have included not only the reported loss of 27 lives in road crashes involving coal trucks between 1978 and 1985, but stunted growth of Wollongong's CBD to the mid 1980s, and negative impacts on residential amenity and tourism.

More comment is given in Appendix B where an estimate of the external cost of road haulage of coal from near Appin is given at \$1.06 per tonne. So, for each million tonnes of road hauled coal from near Appin, the external cost will be over \$1 million. The failure of government to recover such costs then leads to the desirability of regulations such as SEPP 7 to reserve coal haulage to rail and/or maintain curfews on the road delivery of coal to Port Kembla.

3. A road solution ?

If by design or accident it is expected that most growth in passenger and freight movements between Sydney and Wollongong will be accommodated by road transport, then major road investment will be required. The cost of this investment, along with the likely external costs should be addressed.

There are appreciable numbers of people who live in Campbelltown and commute to Wollongong, and others who live in Wollongong and work in Campbelltown. From 1995, the two lane Appin - Campbelltown road has had increasing traffic, with an average loss of two lives per year from road crashes. Upgrading of this road (or banning B-Doubles from it), along with further works on the Appin Bulli Tops road through the sensitive water

catchment area, will be necessary. Further capacity augmentation of the Mount Ousley Road will also be needed. North of Heathcote, either the controversial F6 will be needed, or other road works. It will cost many hundreds of millions of dollars. So also would development of a new road as an alternative to the Mount Ousley Road.

The final strategy could usefully give a range of costs to these road works, which will probably exceed \$1 billion, and address the potential role of tolling. This could include reinstatement of tolls at Waterfall (not just a flat toll, but one reflecting peak or off peak use, and length of journey on dual carriageways) and or a future F6 as a way of road vehicle use demand management and also raising revenue for road works – including the now substandard Princes Highway south of Kiama.

4. A rail solution ?

Alternatively, it may be decided that rail should be moving more people and freight. There is already a need for an improved passenger train services. The NSW Government has a firm policy of trying to increase the proportion of containers moved to and from Port Botany by rail. It would be of interest to see what measures the NSW Government will adopt to increase the proportion of cars imported through Port Kembla that are to be moved by rail.

It is noted on page 13 of the draft strategy that *"Commuter journeys along the Illawarra rail line are already operating at close to peak capacity. When population growth is taken into account, the Illawarra rail line will reach critical levels before 2016 during the morning peak (between 7.30 am and 9.00 am at Central). More services may need to be provided during the off-peak periods in the longer term as well. This would necessitate either lengthening of existing South Coast trains or the provision of additional services, which will lessen the availability of freight paths in non-peak times."*

The final strategy could usefully mention that the May 2006 RailCorp timetable slowed down passenger trains. The extending of passenger train transit times in May 2006 appeared to be due to reasons of rail congestion rather than rail safety.

In addition, the option of less freight on rail and hence more freight on road is considered as worth avoiding due to the significant external costs.

One rail option is to further invest in the existing line, including the twice promised Waterfall -Thirroul route with a long tunnel or even partial realignment (absent from the draft, needs acknowledgement in the final report). The Waterfall – Thirroul route was quoted in a 2003 consultants report for the NSW Government as costing about \$1.4billion

± 30 per cent in a 2003 report. In addition, triplication (works in Brisbane and for the ARTC) or quadruplication (has appeal but is more costly) of the Hurstville – Sutherland line. This section of track will see more trains following duplication of Cronulla – Sutherland within a few years as part of “Clearways”.

Despite the overall intention of the AusLink process to take “*an integrated approach to road and rail issues*”, road issues rule. Indeed, of the 7 listed Short Term Priorities, 6 relate to road and only one relate to rail. This is despite the acknowledged seven hour curfew on rail freight movement on the Sydney – Wollongong line, and the May 2006 passenger timetable that extended passenger train transit times. These delays warrant acknowledgement in the final report.

It is submitted that a new Short Term Priority should be ***reducing freight train curfew time and passenger train transit times on the Sydney – Wollongong railway.***

This is considered to be more appropriate than “*Improving the competitiveness (or utilisation) for rail on the Moss Vale-Port Kembla rail line.*”

4a. Maldon Dombarton ?

The acknowledgement of the Maldon – Dombarton link in the draft strategy is appreciated. However, information should be given in the final report about the extent of work undertaken during the 1980s to commence the project, and the work needed to complete the 35km link. A note as to its potential traffic, including coal from the Western fields (which could use the new ARTC Southern Freight line) and its ability to ease present rail curfew restrictions, if any, would also add to the final report.

The completion of the Maldon Dombarton rail link would be a much less expensive option than improving rail capacity on the existing line.. This link could usefully be regarded as a “*not if, but when*” investment, and the NSW Government should move to acquire the complete corridor (most is already held) and commence additional environmental impact assessment to meet any new requirements introduced since when the 1983 EIS was completed.

It is submitted that a new Short Term Priority should be along the lines of ***undertaking a full feasibility study of the costs and benefits of completing the Maldon Dombarton rail link, acquiring all land necessary to complete the project and undertaking residual environmental impact assessment.***

An additional rail Short Term Priority or two would restore some balance with the five specific road related Short Term Priorities.

5. Oil vulnerability

As per comment on other corridor strategies, it is desirable that oil vulnerability be addressed. This point has also been addressed in the Final Report of the Rural and Regional Affairs and Transport Committee Inquiry into Australia's future oil supply and alternative transport fuels that was released on 7 February 2007 (see Appendix C). Their Recommendation # 7 is of note as follows. *The committee recommends that corridor strategy planning take into account the goal of reducing oil dependence ... Existing Auslink corridor strategies should be reviewed accordingly.*

6. Higher Mass Limits

The caution of the Final Report of the Senate Inquiry into Australia's Oil Supplies about Higher Mass Limits (HML) is also of note and may apply to the link between Gwynneville and Port Kembla.

In any event, it is submitted (see also Appendix D) HML should not be introduced until there is appreciably improved road pricing for B-Doubles and other articulated trucks along with the heavier rigid trucks, and, progress has been made in 'pricing for productivity.'

7. Scenario modelling

Finally, there is scope for scenario modelling for the likely investment costs, external costs, and oil use for various scenarios for the corridor. These were partly addressed in a now dated University of Wollongong 1993 study for the former Energy Research and Development Corporation. The 2006 Brisbane- Cairns corridor strategy considered future rail freight demand and three scenarios were examined:

- Base case – rail captures 95% of its current mode share,
- Market defence – rail captures its current mode share, and
- Rail growth – rail captures 105% of its current mode share.

New scenarios for the Sydney - Wollongong corridors could include unrestrained road growth, restrained road growth with an improved Sydney - Sutherland - Wollongong rail link and/or a completed Maldon Port Kembla Railway.

B. MALDON PORT KEMBLA RAILWAY AND WENTWORTH ROUTE

*EDITED EXTRACT of submissions to the House of Representatives
Standing Committee on Transport and Regional Services Inquiry into the Integration of
regional rail and road freight transport and their interface with ports*

1. The Committee's attention is invited to Port Kembla and the question of when is the best time to complete the Maldon-Port Kembla railway. It is submitted that completion of this railway is a question (to quote the Hon N Wran QC in his report in the mid 1990s on the Alice Springs - Darwin railway) of '**not if, but when**'.

The final report of the State Development Committee in relation to the Inquiry into Port Infrastructure in New South Wales released 17 June 2005 noted, inter alia, comment for and against completion of the Maldon-Port Kembla railway, and the option of tying it in with the "Wentworth" rail deviation from near Menangle to Yanderra or Aylmerton. The NSW Committee made two related recommendations:

Recommendation 12. That following the anticipated transfer of general cargo stevedoring to Port Kembla in 2006, the NSW Government re-examine the freight task out of Port Kembla to ensure that the anticipated increase in freight traffic is supported by the necessary improvements in road and rail infrastructure.

Recommendation 13. That the NSW Government consider the feasibility of expanding rail infrastructure into Port Kembla, including consideration of the Maldon to Dombarton line, in conjunction with the AusLink program.

The Maldon-Dombarton rail link is a 35 kilometre partly completed link. It was started, with enabling legislation, in 1983 by the Wran Government to improve rail access to Port Kembla. During the 1980s, the following work was done:

- a. Environmental impact assessment plus design and documentation.
- b. Construction and ballasting of over 25 kilometres of right of way from west portal to the boundary of Water Catchment near Wilton.
- c. Construction of approach viaducts in 1984-85 to Nepean River Rail Bridge.
- d. Installation of plant and site works, environmental control measures, start of tunneling at Avon tunnel on east portal and construction of west face of portal. The Avon tunnel contract was cancelled by the Greiner Government in mid 1988 (with \$4.5 million compensation to the contractors and contrary to pre-election promises to complete the line by 1991).

In addition, the 15 km Dombarton-Port Kembla section was upgraded and duplicated, with erection of masts from Port Kembla to Dombarton for high voltage electrification for the entire Maldon Port Kembla project. More details are given in Appendix A.

The sunk cost (dollars of the day) for the work done on the Maldon-Dombarton section was noted by Freight Rail (at the Port Kembla Coal Terminal Inquiry, 1993) as \$42 million, and the work done on upgrading and duplication of the Dombarton - Port Kembla section as \$57 million (the latter as part of upgrading Moss Vale - Unanderra line to support export grain, limestone and steel traffic).

The following changes have affected the case for completion of the link:

- A. Ongoing demand for electric trains from Sydney to Wollongong, with demand for more passenger trains leaving less paths for freight trains on the Illawarra Line.
- B. Increased rail congestion in Sydney, coupled with the extra costs of raiiling coal via inner Sydney (with increased curfews on coal train movements each working day), and the steep Como bank needing 4 diesel electric locos for a 45 wagon train. Rail congestion is an increasing issue in parts of Sydney.
- C. Work, completed in late 1996 near Granville that gives a direct connection for coal trains moving between the Western coalfields and Maldon.
- D. Some upgrading of the line from Liverpool to Campbelltown for freight trains under the 'One Nation' program 1992-95, with more due 2005-08 by the ARTC.

The changes are in addition to the commissioning of a new Grain Terminal at Port Kembla and closure of the Rozelle Grain Terminal, and, closure of the Balmain coal loader.

Although coal tonnages have not met some earlier projections, and some mines have closed, there is potential for a Maldon Port Kembla railway to carry new freight and passenger traffic. As a new Waterfall-Thirroul route is not going to be constructed by 2010 or even 2015, then [despite a somewhat negative response from the NSW Government in December 2005 to the recommendations of the NSW State Development Committee] there is an increased case for early completion of the Maldon Port Kembla Railway.

1 Civil works required for completion

Based mainly on a State Rail Brochure released in the mid 1980s, the work remaining to complete this railway is as follows:

Avon Tunnel

- Single track tunnel of horse shoe section with 8.0 m nominal diameter.
- The tunnel will be 4020 metres long at a ruling grade of 1 in 30.
- Estimated cost (c 1983 - the 1988 contract was for \$20m+) of works \$35 million.

Cordeaux River Rail Bridge

- Concrete arch bridge with springing points 132.0 metres apart. The overall length of bridge is 243.8 metres including approach spans.
- Construction of access roads is completed (1983). Estimated cost of works \$4.5m.

Nepean River Rail Bridge

- Prestressed concrete box girderbridge of balanced cantilever construction. The main bridge is 189.6 m long and comprises three spans the longest being 90.0 m.
- Estimated cost of overall bridge works \$6 million (approach viaducts completed by 1985).

F5 Freeway Overbridge

- Bridge for single rail passing 12 metres beneath the four lane freeway.
- Estimated cost of works \$1.5 million.

Condell Park Road and Janderra Lane Overbridges

- Two bridges each 21.5 metres long and 5 m wide carrying the road over the railway. Estimated cost for both bridges \$450,000.

Trunk Road 95 Overbridge

- Bridge of 26 metres span and 23 m wide carrying 4 traffic lanes over the railway.
- Estimated cost of works (1983) \$750,000.

Earthworks

Only the section from the Water Board Boundary to Maldon is needed, located about 128km to 133.2km; a little over 5km. Note that the earthworks for No 2 Portal Avon Tunnel to Cordeaux River and then to the Water Board Boundary (about 103km to 123km, then 128km) were completed in the mid 1980s. The cost in 1985 was about \$9 million (three contracts). Earthworks at Maldon Triangle/Siding have also been done.

Trackwork

New single track (with three passing loops at Avon, Cordeaux and Wilton) is needed from Dombarton (98.3km) to Maldon (133.2km) about 35km in all. Note that a major section in the water catchment is already ballasted.

2 Signalling and Communications, and possible electrification

To the above works would have to be added signalling and communications plus the cost of any electrification. It is understood that CTC signalling was installed between Coniston and Moss Vale during the mid 1980s.

By the mid 1980s, after a study, State Rail had decided to electrify at 25,000 volts AC, as opposed to the older 1500 volts DC system currently in use in Sydney and Melbourne. The study found that the cost in 1985, excluding locomotives, was \$21.5 million for the 25,000 volt AC system and \$40.3 million for the 1500 volt DC system.

Although 25,000 volts AC electrification should have been used in the extensions in the early 1980s of electrification to Newcastle and Port Kembla by State Rail with dual voltage rolling stock and locomotives, it was passed over in favour of 1500 volts DC. Moreover, the attempted use of 1500 volts for heavy haulage of coal to Port Kembla proved to be a costly and failed experiment. Despite this, it may or may not be cost effective to use 1500 volt DC locomotives for banking or pusher locomotives to assist diesel electric locomotives on any heavily loaded uphill trains on the sections from Unanderra to Dombarton and then the 4km Avon Tunnel with its steep 1 in 30 grades.

3 Costing

The main item is the tunnel. Note that the contract issued in 1987-88 to build the tunnel was for about \$20m, and that No 1 portal was built then. A rough estimate to complete the tunnel is in the order of \$50m.

The bridges noted above total \$15m, and based on the three contracts above the remaining earthworks would have then been about \$2m. The Roads and Traffic Authority road price construction and maintenance indices (their 1996 and 2005 Annual Reports) increased from 1985-86 to 2004-05 by 1.86. One would expect the bridges and remaining earthworks to have at least doubled, with \$35m as a ball park figure.

For track work, based on advice for a recently completed project in a different Australian State to NSW, the cost of sleepers, rails and ballast was about \$0.5 million per km (including crossing loops). On this basis, and with 35 km of track to lay, the current cost is approaching \$20 million.

The sum for the civil works including track work is \$105 million, and so in the order of \$100 million. Thus, even with signalling and communications, the estimate provided to the Committee during the hearings on 1 February 2006 in the order of \$200 million was too high.

NOTE ADDED This estimate could now be conservative.

4 Benefits

In considering completion of the Maldon Port Kembla Rail link, the following factors are relevant:

The growing rail congestion in Sydney metropolitan region, with freight train curfews.

The planned expansion of Port Kembla.

It could be used for passenger trains.

The slight risk of potential failure of the Waterfall -Thirroul line.

The somewhat slighter risk of potential failure of the Moss Vale - Robertson line.

The rail project is half completed.

Easier paths for coal and other freight trains.

Support of the Port Kembla Coal Terminal, and (qualified) Illawarra Coal (BHP Billiton)

It would tie in well with the Wentworth Route, or parts thereof.

Re coal trains - the Maldon Dombarton Rail Link would provide significant distance savings for Tahmoor Coal to Port Kembla with a rail distance of 72km. This compares with 118km via Moss Vale, or 175km via Enfield.

As above coal trains from Lithgow on the Western line proceeding through Enfield is congested, subject to curfews, and loaded coal trains bound for Port Kembla have to climb the steep Como bank to Sutherland with a distance of 101km from Granville to Port Kembla. With completion of Maldon - Dombarton, by use of the triangle with the flyover at Granville the distance from Granville to Port Kembla is 109 km. Such movements would be further facilitated by construction by 2009 and now under way of the South Sydney Freight Project by the Australian Rail Track Corporation at a cost of \$192 million.

The estimated distance from Granville to Port Kembla after construction of both the Maldon - Dombarton railway and the Wentworth Route (Appendix B) both sharing 2 km of common track near Wilton and bypassing Maldon at 82.5 km) is about 102 km.

APPENDIX A OLDER NOTES MALDON PORT KEMBLA RAILWAY

The following gives older information on this railway. Much of the material in these notes appeared in the Illawarra Mercury on 3 Sept 1996. Since then, Burratorang Valley coal mines have ceased production and NSW rail freight has been privatised. More recently, in 2003 Port Kembla has been identified as a potential container port, and questions have been raised about both the long term future of the Stanwell Park Viaduct and the commitment of the NSW Government to complete a new Waterfall Thirroul railway by 2010 (abandoned later in 2003 with release of the summary of a consultants report escalating the cost from \$300 million to over \$1 billion). Some older studies are now reviewed.

A. Wollongong City Council, after reviewing projections for increases in coal exports, resolved in August 1991 *to seek a full cost benefit analysis by the Ministry of Transport into rail and road transport as it applies to coal haulage to and through the City. This analysis should have full regard to all hidden costs and subsidies and to externalities including social and environmental costs, be made public, and should form a basis in setting road user costs, rail freight rates, and the proposed Maldon Dombarton link.*

To response of the NSW Department of Transport was to firmly refuse to conduct such an analysis. In 1994, notes for a private briefing at the request of former Transport Minister Bruce Baird claimed, in summary that *"The Maldon - Dombarton rail link is not a viable rail link at this stage."*

B. The House of Representatives Standing Committee on Transport, Communications and Infrastructure in its April 1992 report "Warehouse to Wharf" from its Inquiry into the Efficiency of the Interface between Seaports and Land Transport noted the main issue relating to NSW coal transport was the high percentage of coal carried to the Port Kembla coal loader by road. The Committee noted the options of completion of the Maldon - Dombarton rail link and conveyors, recognised that such matters fall directly within State Government jurisdiction, and, recommended that a detailed evaluation be undertaken, that would *"...carefully consider and balance all social, economic and environmental factors."*

C. The results of a Bureau of Transport and Communications Economics study of export coal transport in NSW were published in October 1992 as part of a report Relative Efficiencies in the Transportation of Commodities. This report gave qualified support to considering the feasibility of completion of the Maldon Dombarton rail link after examination of coal exports in 1988-89 - a year when the export tonnages were low.

In regards to coal transport, the main conclusion of the study as noted in the 1990-91 Annual Report of the Department of Transport and Communications - pages 206-207) was *"... that rail is clearly a lower cost option than road in social cost terms for the line haul component of coal transport."*

D. In late 1992, Environmental Impact Statements (EIS) were released by BHP Collieries and the Port Kembla Coal Terminal (PKCT). In summary, coal exports were projected to increase from 15.5 mtpa in 1991-92 to 20 mtpa in the late 1990s. Total haulage of coal to Port Kembla for export and use by the steel works was projected to rise from about 20 mtpa to 26 mtpa. Although BHP indicated that a Maldon Dombarton link could take some 2 mtpa of coal from Tower Colliery to the BHP Steelworks at Port Kembla (then road hauled to O'Brien's Drift at the top of the Illawarra escarpment and now

directly down Mt. Ousley Road to the steel works), the PKCT did not favour completion of the line. Instead, the PKCT EIS suggested ongoing high levels of road haulage of coal at about 6 mtpa.

Wollongong City Council favoured reduction of road haulage and proposed in 1993 that Clutha coal on road be reduced from about 2 mtpa to 1 mtpa. The PKCT lodged an amended application in 1993 with the NSW Minister for Planning that was the subject of a Public Inquiry held in September/October by a NSW Commissioner of Inquiry. He reported in favour of coal terminal expansion without limits on road haulage in January 1994.

Evidence was presented to the Inquiry showing that the Federal funding of Illawarra roads used by coal trucks was about \$100 million since 1976 in 1993 terms, and the NSW Roads and Traffic Authority advised the Inquiry that net State funding was about \$150 million.

E. In 1993, a study by the University of Wollongong for the Energy Research and Development Corporation (ERDC) applied the BTCE unit operating costs to updated data given in the BHP EIS and PKCT EIS. It was then found that if the Maldon - Dombarton rail link was completed and electrified between Glenlee, Tahmoor and Port Kembla, and the new rail link was used for all Western, Clutha, Tahmoor and Tower coal, positive benefits would result. This option was found to have a benefit cost ratio of 1.15, and compared with the arrangements proposed by the coal industry, would reduce operating costs by some 17 per cent and social costs by about 23 per cent, plus save about 9 million litres of diesel a year.

In assessing the benefit cost ratio of 1.15, a discount rate of 7 per cent was used and social costs were excluded. Other factors excluded were:-

- i. The development of Port Kembla as a point of export of agricultural and horticultural produce, and the option of diverting wool exports from Sydney to Port Kembla.
- ii. The use of the line by passenger traffic, linking Wollongong to Campbelltown and Parramatta and possibly Sydney's second airport. (Note Wollongong-Dombarton-Maldon-Parramatta will be about 109 km as against 103 km for Wollongong-Sydney -Parramatta).
- iii. Employment benefits in construction, and regional development on its completion.

The ERDC project report (Land Freight Transport Energy Evaluation Main Report, Part One, P.G. Laird and G. Adorni-Braccesi, ERDC, Canberra) noted low energy efficiency, high transport operating costs and high social costs for transporting coal to Port Kembla.

F. Coal trucking safety and technology has improved during the 1990s with heavier legal mass limits for 6 axle semitrailers in the late 1980s. Following Wollongong City Council approval in late 1995, some use has been made of B- Boubles. Rigid tracks with trailers are also used. Although O'Brien's Drift was upgraded in the early 1990s its use ceased later in the 1990s.

Coal trucking is however, considerably more energy intensive than efficient rail operations. The ERDC project found that measured on a scale of 10 (net tonne km/MJ), BHP iron ore railways in the Pilbara were 10 out of 10, where as coal trucking to Port Kembla was about 0.7 and for coal trains using the existing rail track approaching 2.0.

G. In May 1993, the Illawarra Economic Development Council (IEDC) ranked completion of the Maldon-Dombarton rail link as "... a medium to longer term need for the

Illawarra" as opposed to a new Waterfall-Thirroul rail tunnel that was noted as "...essential to the economic development of the Illawarra". This was despite recognition by an IEDC Transport Infrastructure Task Force that *"Increasing serving of the port of Port Kembla by road for bulk products, especially coal, is considered undesirable by the community and tourism agencies"*.

The failure by the IEDC to give priority to completion of the Maldon-Dombarton rail link was widely criticised in the local media. This ranking was repeated in a State Rail Strategic Plan of January 1995 that raised a new Waterfall-Thirroul link as a future option and ignored Maldon-Dombarton.

H. Completion of the St Marys/Badgerys Creek - Campbelltown - Maldon-Dombarton rail link was raised in the 1995 report of the (Kelty) Task Force on Regional Development.

I. Funding for a \$100,000 feasibility study for completion of a St Marys/Badgerys Creek - Campbelltown - Maldon-Dombarton rail link was approved in December 1993 by the Federal Department of Local Government. The report was presented to Wollongong City Council in May 1995, and examined in some detail potential coal and general freight traffic.

The main finding of the Kinhill Engineers report, based on calculated negative Net Present Values was *"...that the St Mary's - Port Kembla rail link is not economically feasible"*... at this time.

In regards to the Maldon - Dombarton link alone, although the NPV's were in one case positive, it was held that completion of the 35 km link was *"not economically feasible and could not be justified on the basis of the coal and freight traffic expected in the foreseeable future. ...There is no evidence that the construction of the rail link would, of itself, contribute to shifting coal from road to rail transport or generate new freight trade..."* and *"...use of the existing rail network would remain economically preferable to investment in a new rail link."* The Kinhill Engineers report recommended instead that

- i. payment of Community Service Obligation (CSO) payments to encourage all Clutha coal onto rail, [protracted examination- then Advance coal - mine since closed]
- ii. *"...establishment of an effective road use charging system whereby road coal freight vehicles pay for the full external costs"* such as pavement damage, congestion, noise and environmental costs, [NSW has moved away from this in 1996 when adopting Australia wide heavy vehicle charges determined by the National Road Transport Commission; and the issue is now receiving attention as the National Transport Commission is completing its third determination of such charges].
- iii. use of planning instruments to maintain the St Marys Glenlee and Maldon - Dombarton rail corridors. [a good recommendation - was it done for each corridor ? - note in 2005 land is held for the Maldon - Dombarton line].

The report also notes a proposal made in 1993 by Mr. W.C. Wentworth for a **complete rerouting of the Main South line from near Douglas Park to Mittagong** (see below).

J. Completion of the civil track and signalling works for Maldon - Dombarton (from above list) is about \$87 million in 1992 terms. The cost of 1500 volts DC electric overhead wiring (capable of later use at 25,000 volts AC) from Unanderra to Avon Loop would be in the order of \$10 million. Total cost for the cheaper option is then in the order of \$100 million. This option should be given further consideration, involving updated costings and further cost benefit analysis.

APPENDIX B THE WENTWORTH ROUTE

The Hon WC Wentworth suggested in 1991 (to a rail inquiry of the Industry Commission - see also SMH 26 Sept 1992) for a new railway to follow the route of the present section of the Hume Highway that was opened in 1980 between Campbelltown and Mittagong. It is of note that in about 1977, the former Public Transport Commission had examined a similar route. During the late 1990s, various options were examined for the former Rail Infrastructure Corporation of NSW and outlined in the 2001 Australian Rail Track Corporation (ARTC) Track Audit.

One proposal for a major 36 km rail deviation between Menangle to Aylmerton is located, for most of its length to the east of the Hume Highway. Starting at 68.0 km from Sydney, the new track would cross the Hume Highway and then follow it to the northern portal of the Aylmerton tunnel at 122.3 km. The net effect would be to replace 54.3 km of track with "steam-age" alignment by 36 km of new track built to modern standards, albeit with a ruling gradient of 1 in 50. The ruling curvature is 1500 m. This new track could 'tie in' with the existing track at 108.2 km near Yanderra, where heavy south-bound freight trains could be diverted onto the existing track, thus giving a ruling gradient of 1 in 60.

The main benefit for completion of 35 km of new track is saving an average of 17 minutes transit line and modest fuel savings for heavy super freighters. Other advantages include improved clearances as per Table 1, and improved reliability of train operations. In this regard, the second advantage was emphatically made by Mr Bob Scheuber, CEO of Queensland Rail at AusRail Plus 24 November 2005. To quote, from notes made at the time: The success of Queensland's Main Line Upgrade that included extensive track straightening was *"...not only more efficiency of train movements but it dramatically reduced derailments with 100km/h trains with an increase in reliability."*

In summary, one option is to replace 54.3km of track with 'steam age' alignment from near Menangle (at the 68 km post) to the northern portal of the Aylmerton tunnel (at 122.3 km) with 36 km of track built to modern engineering standards. This would have a ruling curvature of 1500 metres, albeit with a 1 in 50 grade that could be eased to 1 in 60 by rejoining the old track near the 108 km post near Yanderra. The land reservation is long overdue.

Indeed, the Wentworth deviation could be built in two sections. The first would be a 25 km section bypassing 40 km of steam age alignment where trains turn left or right the equivalent of 8.5 circles over 22 km of track with tight radius curves less than 800m. The second section would be about 11 km to replace an old 14 km section where trains turn 4 circles on 8.4 km of tight radius curves.

A combined option

This is to construct together the Menangle - Wilton - Yanderra track (25 km) and the Dombarton - Wilton - Maldon (35 km) sections.

The Menangle -Wilton- Yanderra section could use part of the alignment of the Maldon - Port Kembla railway (east of the road interchange between the Hume Highway and Wilton/Picton road).