

Maldon to Dombarton Rail Link Feasibility Study

Issues Paper

Submission

to

**Commonwealth
Department of Infrastructure and Transport**

Version 1.1

Prepared by

Transport Network Associates

Reviewed by Terrey Civil & Rail

17 December 2010

This material is copyright and may only be used for research provided full acknowledgement is given, unless written exemption is provided by Transport Network Associates

For further information contact:

Bob Miller

Director

Transport Network Associates

P: 02 9589 0860

M: 0419 289181

CONTENTS PAGE

1. Background	4
2. Strategic overview	5
3. Western Suburbs Impacts and Metropolitan Freight line	6
4. St George Sutherland Housing Development and Impacts	7
5. Wollongong, Illawarra Escarpment and Illawarra rail line	9
6. Wollondilly impacts	10
7. Port Botany Stage 1- 3	11
8. Port Botany import/ export projections	11
9. Study assessment period	12
10. Rail freight operating constraints in Metropolitan Sydney	12
11. Project costs, benefits and risk management	13
12. Scope of the proposed cost benefit analysis	15
13. Costs of not completing Maldon-Dombarton	15
14. Issues Paper and Questions	17
15. Key Conclusions and Recommendations	20
Abbreviations	25

1. BACKGROUND

The Maldon Dombarton Railway would, if completed, provide a more direct rail link for transporting coal and other freight between inland NSW, Western Sydney and Port Kembla.

The route continues using the Main West line from Lithgow to Granville, but then follows the Main South line through Liverpool, Campbelltown and onto the new Maldon - Dombarton line through to Port Kembla. Coal and other freight could use a new freight track (under construction) on the Main South line, south of Cabramatta to avoid Liverpool and Campbelltown CityRail services.

The project was planned during the late 1970s and early 1980s as part of a route for transporting western coal across the Blue Mountains, with a by-pass through western Sydney to minimise impacts on the metropolitan area.

The overall project involved a new route between Western Sydney (near Kingswood to Glenfield via a future Badgerys Creek Airport) and the main southern line; plus the 35 kilometre Maldon - Dombarton Railway which was partially completed, connecting to a 15 kilometre Dombarton - Port Kembla section, which was completed.

The current rail coal freight route traverses Sydney's western suburbs and the St George - Sutherland region along the Illawarra rail line through to Port Kembla.

This submission on the current Feasibility Study of the partially constructed Maldon-Dombarton Railway considers key matters that warrant consideration by the Department and the consultant undertaking the study. A response to the issues raised in the submissions is requested to assist building community confidence in the Feasibility Study. Key matters outlined below include:

- **Strategic overview**
- **Western Suburbs Impacts and Metropolitan Freight line**
- **St George Sutherland Housing Development and Impacts**
- **Wollongong, Illawarra Escarpment and Illawarra rail line**
- **Wollondilly impacts**
- **Port Botany Stage 1- 3**
- **Port Botany import/ export projections**
- **Rail freight operating constraints in Metropolitan Sydney**
- **Project costs, benefits and risks**
- **Scope of the proposed cost benefit analysis**
- **Costs of not completing Maldon-Dombarton**
- **Issues Paper and Questions**
- **Key Conclusions and Recommendations.**

2. STRATEGIC OVERVIEW

Strategic significance of the project to the Greater Sydney metropolitan freight network can be gauged from the range of economic, social, environmental and health benefits that can be attributed to completion of the Maldon-Dombarton Railway project. In summary, the contribution of the project to improving economic, social and environmental benefits and reducing recurrent costs, include:

- **Economic benefits** from increasing competition in the Greater Sydney freight market by reducing current transport network constraints, including:
 - value of track capacity freed up on the Illawarra line and Port Botany line,
 - avoiding cost of future infrastructure investment required to resolve existing and emerging critical capacity constraints on these routes,
 - improved rail freight transit time and reliability
 - revenue potential from freight train services between inland NSW, Western Sydney, southern coalfields, Wollongong and Port Kembla,
 - savings from reducing truck congestion and breakdowns that contribute to the cost of delays to freight, commuters and other traffic,
 - savings in capital outlays from deferring future road investment required to supplement Mt Ousley Road and Bulli Pass capacity – due to potential shift in road coal and other freight to Maldon-Dombarton.
- **Social benefits** from reduced trucking of coal and other freight resulting in lower road crash costs from injury, disability and deaths, especially in the Picton - Wollongong area
- **Environmental and health cost savings** from reduced trucking of coal and other freight, including:
 - net reduction in Greater Sydney population exposure to freight train noise and toxic diesel air pollution – due to the project allowing re-routing of freight trains from areas of very high population exposure in Sydney's inner and western suburbs, St George, and Sutherland to areas of low density population,
 - net reduction in green house gas emissions
 - reduced exposure to truck noise,
 - reduced exposure to toxic diesel emissions from trucks,
 - reduction in heavy metals from truck tyre wear polluting waterways and catchments.

The Feasibility Study Terms of Reference (ToR) should include consideration of the short, medium and longer term strategic context.

To assist the project team to fill this gap in the study some notes are provided below for use in the Feasibility Study, provided appropriate acknowledgement is made wherever used.

3. WESTERN SUBURBS IMPACTS AND METROPOLITAN FREIGHT LINE

Auburn, Canterbury and Marrickville Council residents have been exposed to increasing impacts from coal train movements to/from the western coal fields. Coal trains currently use the main western line to Lidcombe, then onto the Metropolitan Freight line to Enfield, Canterbury and Marrickville and Meeks Road Junction, joining the Illawarra rail line.

Residential redevelopment has increased population density along the route, significantly increasing the number of residents exposed to toxic diesel emissions from freight trains, even though rail freight emissions per net tonne kilometre are substantially lower than road freight for an equivalent freight task.

There are some 100,000 residents, workers and visitors adversely affected by toxic diesel and noise emissions from freight trains in the inner western suburbs of Sydney. The Maldon-Dombarton Railway has the potential to significantly reduce the social and environmental impact in the western suburbs with most coal freight using the completed Maldon Dombarton-Railway.

While completion of the rail line project would have substantial benefits for many residents of the western suburbs, people living adjacent to the southern line between Granville and Maldon are likely to be exposed to increased toxic diesel emissions from coal and other freight trains. However, the population density along the route is generally low to moderate. Regional centres along the route that could be affected include Liverpool and Campbelltown.

Should the Maldon Dombarton-Railway not proceed, and the existing route to/from the western coal fields continues, any growth in train movements on the main western line is likely to increase rail congestion east of Granville, delaying freight trains west of Parramatta, increasing train travel time and availability. This will increase train operating costs (both passenger and freight) and diesel air emissions with increased health impacts on the population in the future.

Note that while the opening of the Chatswood- Epping rail line allowed four additional train paths per hour on the Western Line these additional paths have already been partly taken up by increased CityRail services in the 2010 timetable.

4. ST GEORGE SUTHERLAND HOUSING DEVELOPMENT AND IMPACTS ON ILLAWARRA RAIL LINE

Rockdale, Kogarah, Hurstville and Sutherland Council residents have also been exposed to increasing impacts from coal train movements to/from the Western coalfields.

Some 300,000 residents, workers and visitors are adversely affected by toxic diesel and noise emissions from freight trains in the region.

Coal trains currently use the main western line, then the Metropolitan Freight line to Enfield, through Canterbury and Marrickville to Meeks Road Junction, joining the Illawarra rail line at Meeks Road to Port Kembla.

Major commercial centres in the St George area on the Illawarra line include Rockdale, Kogarah and Hurstville

As part of the NSW Government's Metropolitan Strategy planning process to achieve higher density living many high density apartments have been built along, or within a short walk from, the many CityRail stations on the Illawarra line over the past decade or more, in addition to older housing stock and medium density two storey walk up apartments from the 1960s.

These developments include the Wolli Creek Precinct, a rapidly increasing high rise development, with a rail interchange between the Airport rail line and the Illawarra line

The Maldon-Dombarton Railway could benefit some 200,000 residents, workers and visitors in the St George region, by providing an alternative route for coal trains and other freight trains to by-pass the current route through seven Councils that traverse the inner western suburbs and Illawarra rail line – on every trip to and from Port Kembla.

Hurstville

Benefits for the regional commercial centre of Hurstville include potential for an even more substantial reduction in toxic air pollution from diesel freight trains than the rest of the St George area. Coal and other freight trains often stop north of Hurstville station. South bound freight trains approaching Hurstville often face a 'red' signal, and have to wait for a 'green' signal before heading southwards, from the four track section to a two track section of the Illawarra Line, which is shared with high frequency CityRail services.

These CityRail services operating south of Hurstville include:

- CBD – Hurstville-Sutherland-Waterfall-Wollongong-Kiama (express, limited stop and all stop);
- CBD – Hurstville-Sutherland-Cronulla (express, limited stop and all stop);
- CBD – Hurstville-Sutherland (limited stop and all stop);
- CBD – Hurstville-Sutherland-Waterfall.

Sutherland

Over recent decades the limited capacity of the junction between Illawarra line and Cronulla line at Sutherland resulted in delays for both freight and passenger trains, primarily on the Cronulla passenger line, due to late running inter-urban passenger trains from the South Coast. While passing loops were constructed to hold freight trains between Sutherland and Loftus, as well as Waterfall, the train running conflicts north of Sutherland persist, despite a capital expenditure of \$350 million on the Cronulla-Sutherland duplication. This outlay included, re-signalisation north of Sutherland to provide contra flow train operation primarily to maintain commuter service timetables during the shoulder and off peak periods if freight train failures occur on the steep grade on the Como bank.

A feasibility study of infrastructure enhancements options for the Illawarra line prepared for CityRail demonstrated that the major beneficiaries of upgrading the Illawarra line between Sutherland and Wollongong were commuters on the Cronulla line – due to travel time benefits from a reduction in commuter delays. Such effects are not unusual in rail network analysis.

The Maldon-Dombarton Railway could benefit some 100,000 residents, workers and visitors in the Sutherland Shire.

5. WOLLONGONG, ESCARPMENT AND ILLAWARRA RAIL LINE

Most rail freight services between Sydney and Port Kembla use a section of CityRail track that crosses the Illawarra escarpment involving a tight alignment and/or poor ground conditions with few passing loops between Waterfall and Coledale.

The combination of freight trains and CityRail passenger services result in a substantial risk of train delays along the Illawarra Railway, with slow transit times and variable on time running performance. There continues to be significant periodic delays due to **single line working in the Scarborough tunnel, as well as geological instability beneath the Stanwell Park viaduct and elsewhere**. When combined with medium to high rainfall the situation cannot always meet safe train operating conditions, even since continual ground monitoring was introduced. Further details are outlined below.

Scarborough tunnel

This single track tunnel has been the source of many delays, for both CityRail services, coal and other freight trains. The tunnel is located between Coalcliff and Scarborough, cut into the cliffs above the Tasman Sea.

Geological instability and high rainfall

The section of track between Stanwell Park and Coledale is subject to a combination of geological instability and high rainfall that has contributed to major rail embankment slips, track wash-aways and CityRail passenger fatalities. The geological instability is partly related to old underground coalmining shafts that run under the Illawarra Railway. It is understood that many of the old mine tunnels and workings have not been mapped, including some tunnels that extend out under the Tasman Sea.

Delays to freight trains can increase the cost for industry and shipping in the Illawarra.

It should be noted that RTA has constructed a viaduct to by pass an unstable cliff face on a low traffic volume section of Henry Lawson Drive in an area where road and rail line stability problems existed for many decades.

The impacts on the Wollongong area from completing the rail line include the following:

- **Economic benefits** are likely to accrue from the Maldon-Dombarton railway construction and increasing competition in the freight transport market with the

potential to reduce some road transport haulage of coal and other freight on key roads including Mt Ousley. This could contribute to:

- savings in freight transport operating costs,
- fewer truck breakdowns that contribute to the cost of delays to freight, commuters, other traffic, as well as shipping schedules.
- **Social impacts** from lower road crash costs from injury, disability and deaths, following completion of the line, while there would be construction impacts, particularly from road haulage vehicles.
- **Environmental and health impacts** from:
 - reduced exposure to truck noise and toxic diesel emissions
 - reduced truck tyre wear and heavy metals polluting waterways and catchments;
 - lower green house gas emissions per NTK from trains compared with trucks
 - construction impacts on biodiversity that would require resolution.

The Maldon Dombarton Railway could benefit some 100,000 residents, workers and visitors in the Wollongong LGA. However, there are some residents in and around Unanderra that live close to the Moss Vale line and the new railway that could be adversely impacted during construction completion and when train movements pass by residential properties.

6. WOLLONDILLY IMPACTS AND MOSS VALE LINE

The impacts on the Wollondilly area from completing the rail line include the following:

- **Economic benefits** are likely to accrue from the Maldon-Dombarton railway increasing competition in the freight transport market in Wollondilly Shire and the surrounding area, with the potential to reduce some road transport haulage of coal from the southern coalfields and other freight. This could contribute to:
 - savings in freight transport operating costs,
 - reduced truck congestion at mines,
 - fewer truck breakdowns that contribute to the cost of delays to freight, commuters and other traffic, as well as shipping schedules
- **Social impacts** from lower road crash costs from injury, disability and deaths, especially in the Picton area following completion of the line, while there would be construction impacts, particularly from road haulage vehicles.

- **Environmental and health cost savings** from:
 - reduced exposure to truck noise and toxic diesel emissions
 - reduced truck tyre wear and heavy metals polluting waterways and catchments;
 - lower green house gas emissions per NTK from trains compared with trucks,
 - construction impacts on biodiversity that would require resolution.

The Maldon Dombarton Railway could benefit some 50,000 residents, workers and visitors in the Wollondilly LGA, though a number of people that live near the new railway would be adversely impacted during construction completion and when train movements pass by properties.

The steep grade over some 14 kilometre of the Moss Vale line imposes restrictions on some freight trains services using the route. In addition, coal and other freight trains that cross the Blue Mountains and use the Moss Vale line have a route some 60 kilometres longer than if Maldon-Dombarton were available. Hence, there is little incentive for these trains to use the Moss Vale line.

7. PORT BOTANY STAGE 1- 3

Stage 1 and 2 of the port development provided capacity for NSW imports and exports by ship for some 30 years, providing some 15 years capacity for each of the first two stages.

Stage 3 of the Port development could provide similar capacity for container exports and imports over the next 15-20 years. However, rail track capacity between Port Botany and the new Enfield Freight Terminal is likely to face substantial constraints within 10 years, placing greater reliance on road freight container movements between Port Botany, the Illawarra, Western Sydney and elsewhere in NSW.

8. PORT BOTANY IMPORT/ EXPORT PROJECTIONS

Port Botany projections for import or export containers could be exceeded with higher than forecast economic growth – if so, capacity constraints on the Port Botany rail line could to be critical within 5-10 years. Hence there is a need for the current study to consider scenarios where Port Botany capacity is reached sooner than currently expected, with the overflow container movements diverted to Port Kembla or Newcastle. The proximity of Port Kembla to Sydney provides significant flexibility for diverting ships into Port Kembla that are bound for Melbourne.

9. STUDY ASSESSMENT PERIOD TO 2030 IS INADEQUATE

The terms of reference provide for benefits to be assessed to 2030, a period of 20 years. Allowing 5 years for this project to reach construction completion, the CBA will in fact assess the costs and benefits of the project over a more limited period of 15 years.

This period of 15 years does not seem consistent with the Department's project web site that has stated: "This study will examine the long term economic viability of the Maldon-Dombarton rail line"

Such a limited time frame places an emphasis on initial capital and operating costs, while the benefits from new rail infrastructure involving multiple parties can take several years after railway construction completion to develop ancillary loading facilities and terminals, and hence full revenue potential, especially if several private sector parties are involved.

Thus, to capture both costs **and** benefits adequately the study time frame needs to be extended, from 20 years to at least 30-40 years.

10. RAIL FREIGHT OPERATING CONSTRAINTS

The National Freight Strategy being developed by Infrastructure Australia is a welcome development and could make a significant difference to improving freight transport for the Illawarra, Greater Sydney and beyond.

At a regional level, new freight infrastructure links, such as Maldon-Dombarton can impact on the transport network far from where construction occurs – with significant economic, social, environmental and operational implications.

Such 'network effects' can assist to resolve operational and infrastructure constraints, or exacerbate current problems. In the case of Metropolitan Sydney, increasing coal exports via the Illawarra line to Port Kembla has a 'triple negative' impact, involving:

- increasing inefficiency for freight train operations on the Illawarra line and Port Botany line – due to limited train path availability and costly delays for freight and CityRail trains,
- increasing capital costs to resolve Illawarra capacity constraints - with higher CityRail service frequency further limiting work time on infrastructure, plus higher costs accruing from deferral of major infrastructure upgrades,
- increasing social and environmental impacts along a highly populated inner city section of the Port Botany line, as well as the Illawarra line through the St George and Sutherland areas with rapidly increasing housing density.

Estimating the indicative capital cost of replacing or upgrading existing infrastructure constraints on the current route is needed in the current Feasibility Study to allow comparison with the capital cost of the Maldon-Dombarton Railway over similar timeframes. This would then allow a BCA comparison of NPVs for alternative routes – a critical output of the Feasibility Study.

Without a comparison of Maldon-Dombarton and the Illawarra line upgrade the confidence level in the Feasibility Study is likely to come into question.

The severe constraints on the rail freight network in the Sydney region have emerged over the past decade or more due to the inability of State and Commonwealth Transport agencies to develop effective strategic plans and investment programs – often due to institutional, political and budget constraints. It is acknowledged that progress has been made with some rail freight construction projects, including the Southern Freight Line and Enfield Terminal, though much more is needed to resolve critical infrastructure constraints.

It is now crucial to the future of the nation's largest capital city freight network that a renewed effort is made to resolve rail infrastructure constraints in Greater Sydney.

11. PROJECT COSTS, BENEFITS AND RISK MANAGEMENT

Costs

The major costs associated with project completion are outlined in the Issues Paper. A key component of the cost estimate involves assessing the project risks, both engineering and financial. While the Terms of Reference and Issues paper adequately deal with the engineering risks, the financial risks associated with project financing and management need further consideration.

Project financing options could include the following:

- Capital raising or float by stock exchange listed company,
- Private equity capital raising,
- Government capital raising through borrowing or bond issue.

The commercial rate of return on investment for private sector options is likely to be in the range of some 15-25%, substantially higher than the Government bond rate. In addition, private sector interest costs, legal costs and project management costs can be considerably higher than government.

If government is not prepared to fully finance the preferred project investment, private sector investors may be prepared to take a stake in the project, following success of the QR National float.

Over the past decade there has appeared to be a rapid escalation in infrastructure project costs with insufficient cost control on many government funded infrastructure projects, such as rail.

A review of infrastructure project management, including design, contract documentation, accountant and legal costs seems warranted to identify where this may be occurring and the possible policy response options. A more disciplined cost control and accountability system in the public sector warrants consideration, including tighter control of corporate consultant fees and up skilling public service project management capability.

Benefits

The potential benefits from this rail project include reduced environmental and social impacts in nine LGAs – Auburn, Canterbury, Marrickville, Rockdale, Kogarah, Hurstville, Sutherland, Wollongong and Wollondilly - which cover some 550,000 residents, employees and visitors.

Benefits of the Maldon Dombarton Railway include:

- \$value of track capacity freed up from substantial reduction in coal train movements on Illawarra and Port Botany lines,
- reduced transit time for freight train services between Port Kembla, Western Sydney and western NSW by avoiding some of the critical rail capacity constraints in the Sydney and Illawarra regions,
- increased revenue potential from greater capacity to move larger volumes of freight between Port Kembla, western NSW, western Sydney, Port Botany and Newcastle,
- reduced locomotive fuel consumption costs due to improved transit time and reduced delays;
- reduced locomotive and wagon maintenance costs,
- reduced crew costs due to improved transit time and reduced delays;
- increased train availability achieving higher revenue potential
- reduction in toxic diesel air emissions and noise from re-routing diesel freight trains currently operating through Sydney's inner western suburbs, St George, Sutherland and Illawarra regions - onto the Maldon Dombarton line,
- lower green house gas emissions through reduced train transit time and improved reliability, as well as more competitive rail freight services reducing some trucking of coal and other freight to/from Port Kembla,

- potential for new freight train services between Western Sydney, Southern Highlands, Wollongong, Port Kembla and Bomaderry,
- fewer road accidents due to the reduction in coal trucks in the Picton – Wollongong area

12. SCOPE OF THE PROPOSED COST BENEFIT ANALYSIS

The scope of the Feasibility Study and Cost Benefit Analysis needs to include the following matters:

- Network analysis, including effects of the proposed rail link from Port Botany to Granville, Moss Vale, Port Kembla and Bomaderry,
- Scenario analysis and pricing options to reduce carbon and toxic air emissions that achieve international best practice (so that the emissions burden on current and future generations can be reduced),
- Fuel price scenarios, given the recent and likely future increases in fuel prices as the global economy recovers from the GFC and availability constraints impact on prices,
- Potential market share for the new rail line to carry coal in the corridor, and the percentage of Illawarra coal truck movements likely to be diverted onto rail,
- Potential market share for the rail line to carry other freight in the corridor to/from elsewhere in NSW, Victoria and Queensland, and the percentage of other freight likely to be diverted onto rail,
- Cost and proposed location of rail facilities required to divert trucking of coal and other freight onto the new rail line.

13. COSTS OF NOT COMPLETING MALDON DOMBARTON

Before any decision is made not to proceed with completing the Maldon Dombarton-Railway smaller scale substitute projects should be costed to determine investment required to provide for increased capacity and improved reliability of rail freight movements between Port Kembla and western NSW, western Sydney, Port Botany and Newcastle.

Negotiation of higher priority for freight train services through Sydney's CityRail network would need to be pursued, such as between Granville and Lidcombe, at Meeks Road junction and Sutherland junction. However, re-emerging capacity constraints are likely to limit opportunities for additional freight train paths through these locations.

Future population growth and import-exports in Sydney will require further capacity enhancement and investment on the Port Botany line and Illawarra line.

Given there are few opportunities for 'low' cost infrastructure enhancement in the vicinity of critical constraints on the Illawarra line, the marginal cost of new infrastructure is escalating. Likely enhancement projects requiring investment should the Maldon Dombarton Railway line not proceed include:

- Re-construction of Meeks Road Junction at Illawarra line, including consideration of a dive or fly over bridge,
- Quadruplicate Hurstville – Sutherland, including Georges River bridge,
- Reconstruction of Stanwell Park rail viaduct,
- Duplication of single line tunnel between Coalcliff and Scarborough.

The cost estimates for these 'substitute projects' would need to include provision for the following:

- major track shutdowns to allow safe OH&S working conditions including busing of CityRail passengers, often restricting major construction work to school holidays,
- other construction hours limited to off peak periods due to priority for maintaining CityRail's commuter services to/from the CBD,
- lengthy sections of 'hard' rock excavation and deep cuttings,
- geological instability between Stanwell Park and Scarborough,
- periods of heavy rain/runoff along Illawarra escarpment affecting construction work.

14. ISSUES PAPER AND QUESTIONS

Completion of the partly constructed Maldon Dombarton Railway project would provide a rail link from Port Kembla coal loader to the Main Southern Railway near Picton, providing freight train access between Port Kembla, the existing Southern and Western Rail lines, Enfield Freight terminal, Lithgow and adjacent coal fields, and western NSW.

The Issues paper outlines the background to the project and some of the costs and benefits of the project proceeding.

Construction of the project commenced in 1983 with substantial work undertaken, including earthworks, drainage, ballast and track. The approach spans for a major new Nepean River Bridge are largely completed. Infrastructure still to be constructed includes the main spans of the Nepean River Bridge; the Cordeaux River bridge and the 4 km Avon Tunnel, plus road bridges, earthworks, drainage, trackwork and connection to the Main Southern Railway.

The potential costs and benefits of electrification have not been included in the Study ToR or Issues Paper. Similarly, the potential for passenger services has not been considered in the publicly available information.

Response to the Issues Paper

Responses to Questions raised in the Issues Paper follow:

Section 3

Question: What demand for freight services can be expected in the next 20 years?

- Response: Only modest demand can be achieved given that the study period to 2030 includes only some 15 years (or less) of the new railway operations.
- The study period is insufficient, especially since all capital costs plus some 15 years of operating costs are included in the CBA - but only 15 years of operating benefits can be included – from a project with an asset life of some 30-50 years or more.
- There are significant regional resource development opportunities in the Illawarra as the new rail link could provide direct rail access to rail terminals in Sydney.
- Rail ballast and sand /aggregate quarry products should be included in the bulk haul traffic potentially using the new rail line.

Refer to Section 9 of this submission for further details.

Question: What capacity there is on existing rail and road links?

Response: It is understood that Mt Ousley is at, or approaching, capacity during peak periods. A significant issue here is the extent to which slow moving coal trucks that usually occupy the kerb side lanes on the steep ascent and descent are effectively imposing congestion costs on other vehicles and drivers. In addition, on the descent, some coal and other trucks overtake slower trucks, blocking other vehicle movements in lane 2 and effectively causing further congestion costs. These costs need to be assessed in the study.

Question: Can any road freight switch to rail?

Response: The extent of road freight switching to the rail line depends on product volume and other requirements in each freight market. There is significant potential but current and future volumes need to be determined in a survey of possible customers. Some products require special loading or transfer facilities to access a rail line, such as coal. The cost of these supplementary facilities needs to be included in a BCA scenario analysis to determine if a net positive NPV is achieved. Road freight costs versus rail costs are a key determinant, so BCA scenario analysis is required for fuel price variability (-20%/+50%) with appropriate elasticities, combined with carbon tax scenarios.

Question: Filling the gap

Refer to Section 10 of this submission for details

Question: Whether a Maldon-Dombarton line would open up new sources of freight demand for example from competing ports

Given the dependence that imports and exports into Sydney have on Port Botany the cost of an interruption to the supply chain from events such as a motorway breakdowns, rail blockages or an natural disaster warrants consideration. If Port Kembla can achieve competitive costs, the Maldon-Dombarton line could contribute to competitive transport services to/from Sydney (Refer to Section 8 of this submission for details)

Section 8:

Question: Are there any other issues the consultants should be made aware of?

1. The opportunities for rail industry servicing, maintenance and renewal of rolling stock and locomotives, along with storage facilities when out of use, are very limited in the Sydney Metropolitan Area. A key constraint on this is the difficulty of transferring locomotives and rolling stock within the Sydney area.
2. The Maldon Dombarton line provides business opportunities for these activities to be carried out on the South Coast without severe train path restrictions that apply on the Illawarra line, taking advantage of South Coast heavy industry, skilled labour availability and competitive costs, along with land availability. The key

- advantages provided by a new rail line are reduced cost and fast return to service of rolling stock and locomotives to meet freight customer demand.
3. A similar opportunity applies to empty container logistics and servicing.
 4. The study needs to consider opportunities for integrating rail and shipping freight business and evaluate strategies involving the new line. These opportunities include aggregation for shipping, containerisation and boutique marketing.
 5. The potential for Port Kembla to be an overflow or Port competitor to Port Botany within 10 years needs to be considered.

15. KEY CONCLUSIONS AND RECOMMENDATIONS

There are few strategic transport corridors of greater significance to the Greater Sydney area that require the attention of the Commonwealth than the Maldon Dombarton Railway proposal. Hence the current Feasibility Study is a most welcome development.

Nine Local Government areas are likely to gain substantial benefits if the Maldon Dombarton Railway project is completed, based on the information in the Issues Paper and assessment undertaken for this submission

These LGAs range from Inner Sydney to outer suburbs of Wollondilly and Wollongong, covering some 550,000 residents, workers and visitors.

- Seven Local Government Areas in Sydney will gain substantial benefits if the project proceeds, involving some 400,00 residents
- Two Local Government Areas, Wollongong and Wollondilly, will potentially gain significant economic, social and environmental benefits from the project proceeding - involving some 150,000 residents, workers and visitors.

Based on the information provided in Issues Paper some key costs and benefits of the project do not appear to be adequately addressed. The information provided below aims to fill some of these gaps.

Key conclusions and recommendations are as follows:

A. Strategic significance

Strategic significance of the project to the Sydney metropolitan freight network can be gauged from the range of economic, social and environmental benefits that would be expected from completion of the Maldon Dombarton Railway project. This includes a contribution to increasing rail freight market share, thereby reducing costs from truck congestion, noise, toxic diesel emissions and truck crash costs involving injury, disability and deaths.

The Feasibility Study Terms of Reference (ToR) should include consideration of the short, medium and longer term strategic context.

B. Western Suburbs Impacts and Metropolitan Freight line

There are some 100,000 residents, workers and visitors adversely affected by toxic diesel and noise emissions from freight trains in the inner western suburbs of Sydney. The Maldon Dombarton Railway has the potential to significantly reduce the social and environmental impact in the western suburbs with coal freight using the completed Maldon Dombarton Railway.

C. St George Sutherland Housing Development and Illawarra rail line

Major commercial centres in the St George and Sutherland areas along the Illawarra line have experienced substantial higher density development over recent decades, including Wolli Creek, Rockdale, Kogarah, Hurstville, and Sutherland.

Some 300,000 residents, workers and visitors are adversely affected by toxic diesel and noise emissions from freight trains in the region.

Benefits for the regional commercial centre of Hurstville include potential for an even more substantial reduction in toxic air pollution from diesel freight trains than the rest of the St George area since coal and other freight trains often need to stop north of Hurstville station waiting for a green signal before proceeding onto the two track CityRail section of the Illawarra line.

D. Wollongong and Illawarra Escarpment

The Maldon Dombarton-Railway could benefit some 100,000 residents, workers and visitors in the Wollongong LGA. However there are some residents in and around Unanderra that live close to the Moss Vale line and the new railway that could be adversely impacted during construction completion and when train movements pass by residential properties.

Unfavourable track alignment and few passing loops exist between Waterfall and Coledale along the Illawarra escarpment. The combination of freight trains and CityRail passenger services result in a substantial risk of train delays along the route, with slow transit times and poor on time running. There continues to be significant periodic delays due to single line working in the Scarborough tunnel, as well as geological instability beneath the Stanwell Park viaduct and elsewhere, which, when combined with medium to high rainfall, cannot always meet safe train operating conditions, even since continual ground monitoring was introduced.

E. Wollondilly impacts

The Maldon-Dombarton Railway could benefit some 50,000 residents, workers and visitors in the Wollondilly LGA, though a number of residents that live near the new railway would be adversely impacted during construction completion and when train movements pass by properties.

F. Port Botany Stage 1 -3

Stage 1 and 2 of the port development provided capacity for NSW imports and exports by ship for some 30 years. Port Botany Stage 1 - 2 have provided sufficient capacity over recent decades through to 2010

Stage 3 of the Port development should provide adequate capacity for container exports and imports over the next 20 years or more. However, rail track capacity between Port Botany and the new Enfield Freight Terminal is likely to face substantial constraints within the next decade or so, placing greater reliance on road freight container movements to/from Port Botany, and delays on the inner Sydney road network during the peak and shoulder periods.

Port Botany projections for import or export containers could be exceeded with higher than forecast economic growth – if so, capacity constraints on the Port Botany rail line could be critical in the not too distant future. Hence there is a need for the current study to include scenarios that require investment on the Port Botany line within a decade.

G. Rail freight operating constraints in Metropolitan Sydney

Key issues concerning capacity constraints and train delays affecting existing coal and other freight trains that need to be included in the Feasibility Study and CBA are as follows.

CityRail has four tracks (2 south bound and 2 north bound) between Sydenham and Hurstville. However, only two tracks are usually available for freight. Between Wolli Creek Junction and Meeks Road these two tracks are shared with CityRail services to/from Hurstville and Campbelltown, resulting in some significant delays to coal and other freight trains, as well as, commuter peak period train path restrictions.

A CityRail train delay on the East Hills - Campbelltown services OR the Illawarra line can result in coal and other freight trains waiting at Meeks Road junction for an extended period.

With increasing CityRail patronage, fewer train paths are likely to be available for freight trains in future, until the capacity constraint at Meeks Road junction is resolved.

Maldon-Dombarton Railway completion provides an alternative route between Port Kembla and Greater Sydney to the Illawarra Line, allowing many coal and other freight trains that currently use this route to avoid the Illawarra Line capacity constraints significantly reducing coal trains operations on the Illawarra Line.

Hence, the project would contribute to improved on time running for all freight trains that need to operate through Meeks Road Junction.

H. Scope of the proposed cost benefit analysis

Study assessment period needs to be extended

As outlined in Section 9, the Feasibility Study assessment period needs to be extended from 20 years to at least 30-40 years, given:

- a construction period of 5 years, the proposed 20 year Cost Benefit Analysis would only include 15 years of costs & benefits,
- benefits from long lasting fixed assets (such as some rail infrastructure), continue to be realised for 40 or more years after construction (with adequate maintenance),
- costs of current rail capacity constraints on the Illawarra line and Port Botany line will increase significantly over the next 30 years and more as rail services increase to cater for growth in population and import-exports.

Costs, Benefits and Risks

The Cost Benefit Analysis for the project needs to quantify the value of positive and negative impacts, as outlined in Section 10, especially:

- \$value of track capacity freed up from substantial reduction in coal train movements on Illawarra and Port Botany lines,
- \$ benefit of reduced transit time for freight trains by avoiding key junctions and Illawarra line,
- \$ benefit from capacity to achieve road to rail mode shift, including additional revenue from transport of southern coal to Port Kembla,
- \$ benefit from reductions in crew, fuel costs and rolling stock maintenance from improved transit time or distance
- \$ benefit from increased train availability achieving higher revenue potential
- \$ value to CityRail of avoiding passenger delays on CityRail services due to freight train delays/failures on the Illawarra lines, including consequent delays on Cronulla - CBD services (see footnote below¹)
- other environmental benefits as outlined in Section 10.

¹ Study by Jacana Consulting for CityRail

Scenario analysis

Cost Benefit Analysis for the project needs to include scenarios to test the effect of changes on project viability, including:

- Capital cost sensitivity (e.g. +/- 20%)
- Operating cost sensitivity of road and rail freight to:
 - diesel fuel prices,
 - train path access charges,
 - train path capacity constraints on Illawarra and Port Botany lines
- Carbon price sensitivity (e.g. \$10, \$20, and \$30 per tonne)
- Costs avoided from delaying road infrastructure investment to supplement Mt Ousley and/or Bulli Pass.

I. Costs of not completing Maldon Dombarton

If the project does not proceed, future rail infrastructure investment will be required to increase capacity on the Illawarra and Port Botany lines, as outlined in Section 12. These costs need to be determined to compare alternative capacity enhancements options to Maldon Dombarton. Inclusion of these options and costs in the draft and final report are needed to verify alternatives to the project.

J. Project feasibility analysis and draft/final reports to be publicly released

Project analysis and draft/final reports should include:

- Scenario analysis and pricing of options to reduce carbon and other pollution emissions (so that the burden on current and future generations are adequately addressed,
- Fuel price scenarios, given the recent and likely future increases in fuel prices as the global economy recovers from the GFC and potential oil supply constraints impacts on prices,
- Potential market share for rail to carry coal in the corridor, and the percentage of Illawarra coal truck movements likely to be diverted onto rail.
- Potential market share for rail to carry other freight in the corridor, and the percentage of other heavy truck movements likely to be diverted onto rail,
- Cost and proposed location of rail loading facilities required to divert trucking of coal and other freight onto rail.

ABBREVIATIONS

CBA - Cost Benefit Analysis

NPV – Net Present Value, \$ value is determined in the CBA

ToR – Terms of Reference