Illawarra Region:
Submission to Infrastructure Australia

Illawarra region's transport infrastructure

Vital links for Australia's economic future

Prepared for

Regional Development Australia Committee - Illawarra

On behalf of the

Illawarra Transport Infrastructure Priorities Forum

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1. INTRODUCTION

1.1 Background and stakeholders

The communities of the Illawarra region have undertaken an extensive and detailed series of public consultations aimed at identifying the highest priorities for the funding of major transport infrastructure. This consultation process engaged a broad range of stakeholders, representative of all sectors of the Illawarra community and economy, including community, businesses and business organisations, transport and logistics providers and academia. The process culminated in the Illawarra Transport Infrastructure Priorities Forum, conducted at the University of Wollongong on 12 August.

At this forum, stakeholders representing the region's peak organisations considered the full range of options and arguments that had been gathered during the public consultation process. Sharon Bird the federal member for Cunningham and Jennie George federal member for Throsby played a leading role in the Forum. Other stakeholders included Wollongong City Council, Port Kembla Port Corporation, the Illawarra Business Chamber, Australian Industry Group, the South Coast Labour Council, transport unions, the Property Council of Australia, Tourism Wollongong, Southern Councils Group, the University of Wollongong, Regional Development Australia - Illawarra, Illawarra Regional Development Board, Shoalhaven City Council, as well as several major transport and logistic organisations.

The Forum identified the following projects as being of the highest priority:

1. Expansion of the Outer Harbour of the Port of Port Kembla
2. Completion of the Maldon-Dombarton rail line
3. Upgrade of Picton Road
4. Upgrade of the Princes Highway from Gerringong to the Jervis Bay intersection (this priority will be the subject of a separate submission from Southern Councils Group).

Forum participants argued that a fully integrated approach must be taken to upgrade transport links relating to the Port expansion. The expansion of Port Kembla Outer Harbour must be supported by increased rail linkages, to meet efficiency and environmental priorities of the Federal government, and to ensure ongoing community support for the harbour development. The Forum also expressed the strong view that road transport would continue to play an important part in the freight task and therefore supported upgrades to the two main connections to the Port; Picton Road and the Princes Highway.

1.2 This submission

This submission deals with the first and third of these projects in considerable detail and makes a brief reference to the second project. Because we think that it would be unwise to pre-empt the outcomes of the Maldon Dombarton pre-feasibility study that is being commissioned by the federal government, this submission does not include a detailed analysis of it. Rather section 3 makes a very brief reference to the potential importance of the project in supporting efficient and safe transportation of suitable commodities to and from the Outer Harbour, and in relieving some of the traffic volume on Picton Road.

A separate submission covering the upgrade of the Princes Highway is being made by the Southern Councils Group.

The case for support for Port Kembla Outer Harbour is covered in Section 2 and the case for the upgrade of Picton Road is discussed in Section 4.

2. PORT KEMBLA PORT OUTER HARBOUR EXPANSION

2.1 Goal of the Outer Harbour expansion

The aim of the proposed Port Kembla Outer Harbour project is threefold:

- to increase the capacity of NSW port system to accommodate growth in the import and export freight task over the coming years
- to accommodate emerging economic activities in western and southern western regional NSW that would not otherwise be viable
- to deliver transport cost efficiencies and savings (and therefore genuine economic benefits) to the Australian economy that would otherwise not eventuate.

The latter is the primary focus of this economic benefit cost analysis, as it is the Outer Harbour's potential to deliver transport cost savings that is the critical factor in determining whether it can be justified on an economic basis (as opposed to pure financial or business case grounds). If the Outer Harbour project can demonstrate that it can generate economic benefits in the form of resource savings (relative to the alternative(s) of facilitating the freight task at either of the other NSW ports, Port Botany or Newcastle) and also cover upfront infrastructure and ongoing operational and maintenance costs, then the project is considered to be justified on a national economic basis. This submission will seek to outline the economic benefits and costs of developing the Port Kembla Outer Harbour.

2.2 Background and Need for Outer Harbour

2.2.1 Port Kembla is becoming a major port

Port Kembla is currently primarily a bulk commodities port servicing the coal mining industry and the adjacent BlueScope steel works. The port currently handles commodities including coal, iron-ore, steel and wheat and has the facilities to handle bulk liquids. In 2006/07, total trade through the port reached 25.4 million tonnes. The major cargoes handled comprised 12.0 million tonnes of export coal, 10.7 million tonnes of steel related products (iron ore imports and steel product exports) and 0.4 million tonnes of grain exports (this was significantly reduced from previous years due to the drought in eastern Australia).

Future changes to the Port area are proposed or currently underway to accommodate the transfer of some cargo from Sydney and the general growth in freight. In the Sydney metropolitan area general freight has been growing by approximately 7% per year between 1995 and 2002 and containerised freight at Port Botany has also displayed a similar growth pattern at 7% per year (although higher growth has been seen recently with 8% average growth in the past five years).

Under the State Government's NSW Ports Growth Plan (2003) a proportion of shipping and cargo currently handled through Port Jackson is being transferred to Port Kembla, a change that began last October when the first shipment of motor vehicle imports arrived at the port's new inner harbour facilities operated by AAT. On initial estimates this meant up to an additional 400 ship visits, 15-20,000 containers, 250,000 motor vehicles and 120,000 tonnes of break bulk cargo (timber, machinery, steel, paper, etc.) to Port Kembla each year. Port Kembla will become the State's major centre for the importation of cars once the Glebe Island operation ceases at the end of 2008. According to Port Kembla Port Corporation the motor vehicle import figures will very likely be exceeded by the end of 2008/09 and are expected to grow to about 323,000 by 2014/15. Many of these vehicles are currently transported to major holding yards in the Minto/Ingleburn area which has good linkages to Port Kembla using a number of routes.

The increases in the trades listed above as well as 250 kilolitres per year of biodiesel which is expected to come on line in 2010 will be accommodated within the Inner Harbour. This growth combined with existing activities including the BlueScope steel precinct and the grain and coal exporting facilities means that there is no longer any available land in the Inner Harbour to accommodate future growth. Consequently, if the port is to continue to attract new trades as well as increase the volume of existing cargoes, additional landside facilities will need to be provided in the coming decades.

A number of potential new trades including coal, iron ore and other bulk commodities already being assessed (see 4.3.4) that if realised would be handled at the Outer Harbour are not trades that are being transferred from either of the Sydney ports. Rather, they are projects that are based in south western NSW, and as such are within closer proximity to Port Kembla Port than to Sydney Ports, and it is likely that in the absence of a major bulk handling facility at Port Kembla they would not be viable. From this perspective the development of the Outer Harbour at Port Kembla would potentially facilitate economic development for the state and the nation as a whole that would not otherwise being able to occur.

The productivity savings to be achieved from moving imports and exports originating from and destined for Sydney's high demand areas through Port Kembla, as well as the port's proximity to potential new trades are the primary drivers of the proposed Outer Harbour development.

Figure 1 displays the Port Kembla Outer Harbour development.

FIGURE 1: PORT KEMBLA OUTER HARBOUR PROJECT

2.2.2 Outer Harbour could readily serve the burgeoning south-west Sydney market

The port is also shaping up to be an attractive export gateway for a range of bulk resources from the western and south western region of NSW. Most of these mining projects will need to rely on road rather than rail transport and the most efficient route for accessing the port is Picton Road.

Western and south western Sydney are the sources of the highest demand for Sydney's imports of general consumables as well as industrial inputs, and Port Kembla Port is providing a viable alternative entry point for these imports that avoids the time and cost caused by having to contend with congestion on Sydney's roads between Port Botany and the consumption locations.

TABLE 1: ORIGIN AND DESTINATION OF ROAD FREIGHT TRANSPORT IN NSW, 2004, 2025

Area	Existing % (2004)	Future % (2025)
Botany	22.1%	23.5%
City, Eastern Suburbs and South Sydney	2.8%	1.2%
Southern Suburbs	1.1%	0.7%
North shore and NW Sydney	5%	2.9%
Inner West and Central West Sydney	17%	20.4%
Industrial West, Blacktown, Penrith	22%	28.4%
Liverpool and South West	16%	18.9%
Interstate and Intrastate	4%	4%

Source: Sydney Intermodal sustainability and opportunities for growth, PATREC Nov 2004, Simon Barney, Sydney Ports Corporation

In addition these parts of Sydney's metropolitan area are also the location of much of Sydney's industrial activity, including manufacturing, distribution and warehousing. Picton Road is the key transport linkage between Port Kembla and Wollongong and these areas of Sydney. Apart from supporting the transfer of motor vehicle imports to pre-delivery inspection sites at Ingleburn and Minto it also supports the movement of domestic freight travelling from west and south western Sydney and destined for Wollongong and the broader Illawarra region.

Figure 2 displays the three major NSW ports, Port Botany (Sydney), Newcastle and Port Kembla.

FIGURE 2: MAJOR PORTS OF NSW

Source: Port Kembla Port Corporation

2.2.3 Potential Outer Harbour freight task

Commodities (bulk and general)

Port Kembla Port Corporation has recently completed a master plan for the development of a new outer harbour facility which is intended to handle a combination of bulk, general (break bulk) and containerised cargo. Pending the construction of the first stage of the Port Kembla Outer Harbour, a number of bulk commodity exports are likely to be handled by the port, and all of these will make use of the major road access routes in/out of the Wollongong and Port Kembla. For example by 2012, 50,000 tonnes of gypsum will travel from Marulan to the port and 200,000 tonnes of the downstream product will then be distributed throughout NSW.

The feasibility of exporting about 200,000 tonnes of iron ore from a mine in Cowra is currently being assessed. If this project proves feasible, exports are likely to begin in 2011.

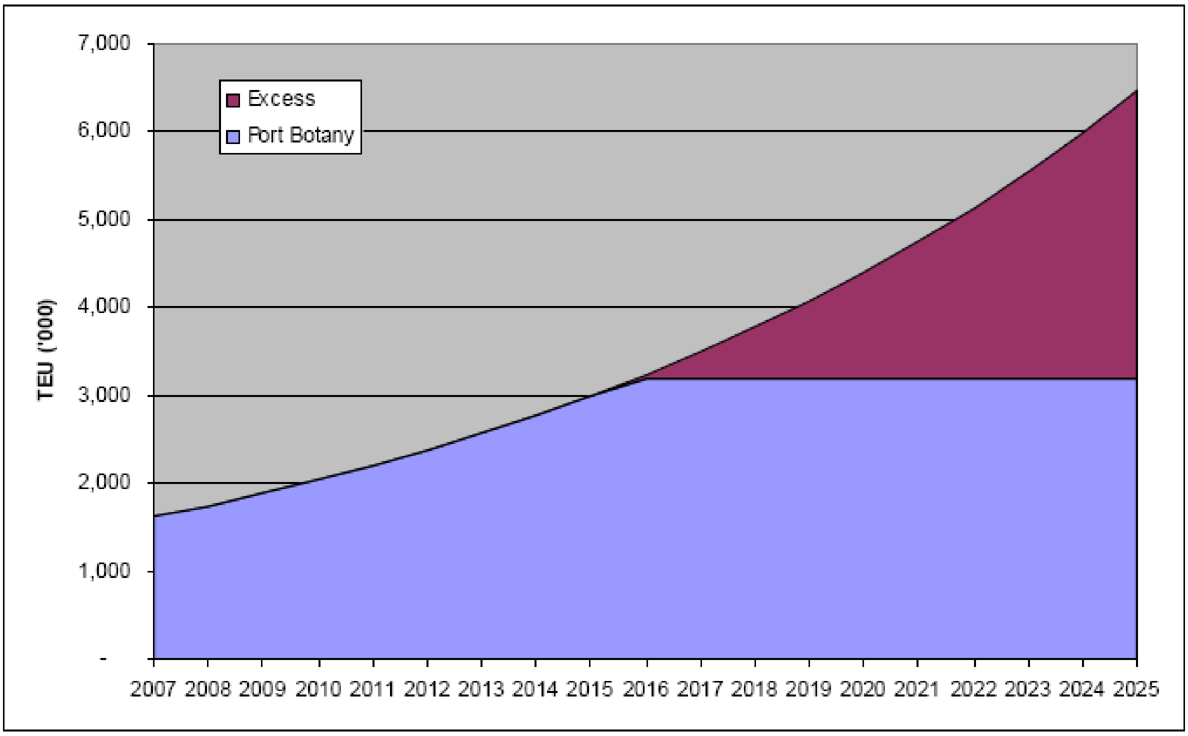
It is understood that a 4 million tonne per year coal export prospect from Albury is also at pre-feasibility stage, and if this prospect is realised it would come on line in the next few years. In addition, pending the outcome of feasibility assessments which are nearing completion and then planning approval being achieved, a, 1 million tonne per year export project with a probable life of 30 to 40 years, could come on line in 2011. This bulk export would be transported by road to reach the port.

Container trade

As well as handling bulk commodities, the Outer Harbour is likely to handle containers. In order to understand how containers may come to the Outer Harbour, an explanation of projected container demand and capacity developments at NSW' primary container facility, Port Botany, is warranted. In 2006-07, Port Botany handled 1.6 million TEU. Container demand is expected to grow into the future, and a significant expansion in port infrastructure is currently being undertaken at Port Botany (construction of the new third container stevedoring terminal). This is anticipated to be completed by 2011.

The Port Botany expansion was initially planned on the basis of long term base growth rate of 5.5% per annum. However, over the past five years, container trade has grown at 8% per annum - clearly exceeding that outlined in the Port Botany Expansion Environmental Impact Statement (EIS). If recent container growth rates are sustained into the future and assuming the annual operating capacity at Port Botany with the third terminal is approximately 3.2 million TEU (as per the EIS), it implies that Port Botany will reach its container capacity limit by 2015-16 (Figure 3).

FIGURE 3: PORT BOTANY CONTAINER CAPACITY LIMIT AND OVERALL NSW CONTAINER MARKET GROWTH



Source: Port Kembla Port Corporation, Outer Harbour Master Plan, July 2008

With Port Botany reaching capacity by mid next decade, the Outer Harbour is expected to handle an increasing portion of the state's container trade.

The Outer Harbour master plan has upgraded forecasts developed in 2005 to now suggest that even in 2014/15 Port Kembla Port could be handling at least 55,000 TEU instead of the previously projected figure of 14,000 TEU. Low case estimates would suggest that this trade would grow to 65,000 TEU by 2020 and then 85,000 TEU by 2030. Trade forecasts typically underestimate growth and so the medium case projections of 116,000 TEU by 2015 growing to 241,000 TEU in 2030 are not an unrealistic expectation for the port.

At a logistics level, there is potential for forecast Outer Harbour container volumes to be efficiently co-ordinated via an inland port (or intermodal terminal) at Moss Vale, located on the Illawarra's southern tablelands. The opportunity to utilise an inland container terminal could provide the Outer Harbour with a means of minimising the amount of expensive port-side land allocated to container storage and consolidation. The result would be more land dedicated to the most productive and vital operation of the Port – berth loading and unloading operations. This is done by storing containers at an offsite terminal which does not take up valuable port land and which is not area-constrained. This particularly applies to the expensive storage of empty containers.

The container logistics model may see a port rail shuttle that would transport boxes from the Outer Harbour to the Moss Vale inland intermodal terminal where they would be stored prior to delivery by to the end customer. At this stage, it is not possible to model the economic benefits and costs of railing containers from the Outer Harbour to an inland port located at Moss Vale, relative to some alternative. This reflects insufficient train operating cost data and trip frequency information. Given this, the focus is on estimating the economic benefits of trucking container cargoes (plus bulk and general cargoes) from the Outer Harbour to destinations/origins in south-west Sydney (see Section 2.6.3) compared to the alternative of Port Botany.

Total Outer Harbour Freight Task

Table 2 displays forecast volumes for the three core trade groups (bulk, general and containers) if moderate growth expectations are realised over the short, medium and long term. These are contained in the Port Kembla Port Corporation's Outer Harbour Master Plan.

TABLE 2: PORT KEMBLA OUTER HARBOUR TRADE FORECASTS BY COMMODITY: MEDIUM GROWTH SCENARIO

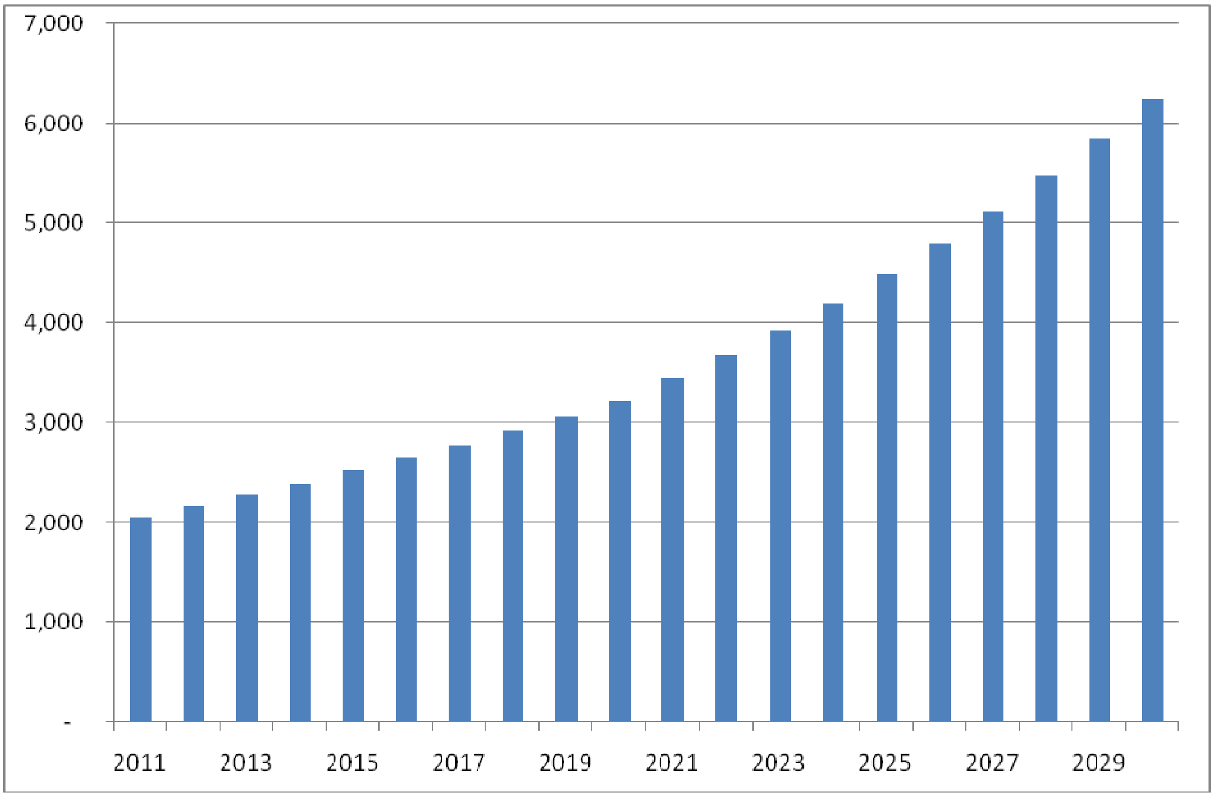
Forecast Date	Bulk ('000 tonnes)	General ('000 tonnes)	Containers ('000 TEU)
2015	1,227	116	116
2020	1,566	148	148
2030	2,551	1,423	241

Note: All volumes rounded to the nearest '000
Source: Port Kembla Port Corporation, Outer Harbour Master Plan, July 2008

Average annual growth rates for each commodity grouping (in Table 2) were derived and used to calculate the annual number of tonnes forecast to move through the Outer Harbour. The container task was converted to tonnages by assuming 1 TEU is equivalent to 14 tonnes.

Given the significance of west and south western Sydney as the primary freight catchment area, it was assumed that approximately 85% of all Outer Harbour volumes is staged and or ultimately originates from or is destined for this area. The resultant size of the Outer Harbour freight task is shown at Figure 4.

FIGURE 4: OUTER HARBOUR FREIGHT TASK ORIGINATING FROM AND DESTINED FOR SOUTH-WESTERN SYDNEY (000'S TONNES)



Source: Meyrick calculation from PKPC Outer Harbour Master Plan, 2008

2.3 Problem identification

The proposed Outer Harbour project is not necessarily a response to a current problem per se. Rather, the project would represent a pro-active response to accommodating forecast growth in the NSW export and import trade in a cost-efficient manner. If the Outer Harbour were not developed, then it is likely cost inefficiencies would build up along the landside supply chain – due to the freight task having to be pushed through a congested and capacity-constrained Port Botany. From this respect the Outer Harbour development effectively identifies an increasing problem and provides a means to address this problem. Secondly, however, as discussed in section 2.2.3 above, the Outer Harbour development is also a response to potential new demand from projects that would not otherwise be feasible.

2.4 Assessment of options

TABLE 3: OUTER HARBOUR DEVELOPMENT STAGES

Stage	Cost $ millions	Description
1	$188	Construction of 1 bulk/multi purpose and 1container berth (2 in total), associated reclamation, minor road links & a new rail line to the new container terminal
2	$247	Construction of second bulk/multi purpose berth, redevelopment of northern Gateway berth as third bulk/multi purpose berth, second container berth and associated reclamation
3	$189	Construction of 2 container berths, road and rail links
Total	$624	

Source: Port Kembla Outer Harbour Master Plan

TABLE 4: FIRST STAGE OF OUTER HARBOUR DEVELOPMENT – PRIORITY SPENDING

Priority for stage 1	Development	Cost
1	Land reclamation	$20 million
2	Berth construction	$53 million
3	Dredging	$24 million
	Total	**$97 million**

Source: Port Kembla Port Corporation, CEO

2.4.1 Wider Economic Benefits

There is insufficient data available to support a credible quantification of this project. However, the nature of the project is such that significant agglomeration benefits might be expected to flow from it. The Outer Harbour will increase the cost efficiency of freight movement between Wollongong and Sydney, as well as provide direct and indirect employment and investment benefits to the Wollongong and south-west Sydney regions.

2.5 Initiative profile

The proposed initiative is for the Federal Government to jointly fund the Stage 1 priority development of the Outer Harbour on a dollar-for-dollar basis with the NSW State Government and its partners in the project. This covers land reclamation, dredging and berth construction to be constructed over two years in 2009 and 2010 at an approximate total cost of $97 million.

2.5.1 Initiative rating and justification

	Rating	How does the initiative meet/ not meet the strategic priority?	Provide data and evidence of how the initiative meets/does not meet the strategic priority	Provide an outline of how the initiative is dependant on policy, regulatory, demand pricing, efficiency and/or capital investment initiatives.
Expand Australia's productive capacity	Highly beneficial	The Outer Harbour development will expand the capacity for bulk, break bulk and, later, containerised imports and exports to be handled at Port Kembla Port and then transported more efficiently to western and south western areas of Sydney which are the sources of Sydney's and NSW's highest consumer demand, industrial activity. The development will also facilitate export and import activities from NSW's south western regions that would otherwise not be viable	See benefits analysis and particularly trip productivity gains in Table 6 See section 2.3.4 for details of new trades and their reliance on Port Kembla and Picton Road	This initiative depends on the development of the Outer harbour at a capital cost of $97m (stage 1)…. See Tables 3 and 4
Increase Australia's productivity	Highly beneficial	The Outer Harbour would improve average cargo handling speed, and transit times from ship load /unload to transfer to and from warehouse and distribution centres in western Sydney and south Western NSW.	See table 6 for Trip Time Cost Savings of $2,085,508	

Diversify Australia's economic capabilities	Highly beneficial	As part of an integrated land and port transport system, the initiative will increase the range of transport corridors for handling NSW imports and exports by establishing an efficient bulk, break bulk port that could not readily be accommodated elsewhere in NSW.	See Section 2.3.2-2.3.4 outlining new trades	
Build on Australia's global competitive advantages	Highly beneficial	The initiative will support the efficient movement of new bulk product imports and exports including soybean mill, gypsum, and possibly iron ore, the second two of which are in high demand globally, and for which Australia has a competitive advantage for the extraction and delivery processes.	See Section 2.3.2-2.3.4 outlining new trades	

Develop our cities and/or regions	Highly beneficial	Given the high proportion of import and export commodities that either originate in or a destined for western or south western Sydney or further inland, and depend on road transport for access to the port, Port Kembla Port in conjunction with Picton Road is a critical import/export supply chain. Its development will therefore be a critical factor in enabling the ongoing – and much needed economic development of the region and the state as a whole.		
Reduce greenhouse emissions	Slightly beneficial	The initiative will enable a lower number of truck trips because of the faster turnaround times between port and inland origin destination, which should result in small but difficult to quantify reductions in exhaust emissions	See benefits analysis and particularly trip productivity gains in Table 6	

Improve social equity, and quality of life, in our cities and our regions	Highly beneficial	The initiative will have a direct impact on social equity by supporting improved economic development of the region as discussed above in this table. It will generate employment in the Illawarra region. For trade that is transferred from Port Botany to Port Kembla, it is likely to reduce congestion on Sydney's main port access freight routes. It will reduce transport costs which in turn will feed into lower prices for goods and services in NSW. This will positively affect real incomes and social equity.	See section 2.2.1 for employment generation effects of Inner Harbour – assume additional impacts from Outer Harbour due to new trades See benefits analysis and particularly trip productivity gains in Table 6	
Linkages	Highly beneficial	The initiative would complement the recent expansion of the inner harbour facilities at Port Kembla port and the unexpected growth in new trades that will rely on Picton Road. It would assist increased connectivity of the Illawarra Region with the high growth areas of metropolitan Sydney as well as southern western NSW.	See benefits analysis and particularly trip productivity gains in Table 6	

2.6 Appraisal Key Results and Assumptions

2.6.1 Overview

Stakeholder: *Regional Development Australia Committee – Illawarra*; On behalf of the Illawarra Transport Infrastructure Priorities Forum.

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2.6.2 Assumptions underlying monetised benefits and costs

Table 5 displays the key assumptions underlying the economic benefit cost assessment of the Port Kembla Outer Harbour.

TABLE 5: ASSUMPTIONS UNDERLYING MONETISED BENEFITS AND COSTS OF OUTER HARBOUR PROJECT

Item	Assumption
Key drivers	Substantial growth in NSW freight trade task (particularly bulk, general and container trades) and strong and time efficient landside transport linkages of Port Kembla to major catchment areas (south-west and west Sydney). High levels of existing landside congestion throughout Sydney urban road network and associated logistical inefficiencies. Capacity and land storage constraints at Port Botany. Extremely high land costs at Port Botany.
Base case	Expanding Port Kembla Port by developing Outer Harbour
First year of construction	2009 (Stage 1)
Last year of construction	2010 (Stage 1)
Discount rate	7% (real)
Appraisal period	30 years
Remaining life	n.a.
Residual value	n.a.

Item	Assumption
Benefit ramp up	See chart below
Capital cost	$135 million
Maintenance cost	n.a.
Operating cost	n.a.
Benefit components	See chart in Benefits and Costs section
Cost & benefit time streams	See chart in Benefits and Costs section
Other	n.a.
Related initiatives	Picton Road upgrade

2.6.3 Details of costs and benefits

The main economic benefit of developing the Outer Harbour is likely to come in the form of truck trip cost savings. The calculations outlined here demonstrate that while the Outer Harbour is physically further away from the main south-west Sydney catchment area (than the alternative of Port Botany), it is likely to provide a more cost-efficient location for shipping. This is due to higher travel speeds between the Outer Harbour and shipper premises at south-west Sydney origins and destinations, plus lower truck turnaround times at port gate. Waiting times for trucks at the Outer Harbour are likely to be substantially lower than those experienced at Port Botany, due to the absence of truck queues at Port Kembla.

Table 6 outlines the key parameter assumptions underpinning the expected truck trip benefits associated with using the Outer Harbour instead of Port Botany. It contains port-to-shipper premises distances, travel speed, turnaround time at port, truck driver costs and vehicle carrying capacity.

TABLE 6: KEY TRUCK TRIP, TRUCK COST AND CARRYING CAPACITY PARAMETERS

Parameter	Number	Assumption/Comment/Source

Parameter	Number	Assumption/Comment/Source
One-way trip distance (kms)		
- Port Kembla Outer Harbour to south-west Sydney	85	Average distance from Outer Harbour to shipper premises in south-west Sydney freight origins/destinations assumed to be 85kms
- Port Botany to south-west Sydney	55	Average distance from Port Botany to shipper premises in south-west Sydney freight origins/destinations assumed to be 55kms
Round trip distance (kms)		
- Port Kembla Outer Harbour to south-west Sydney	170	On average, it is reasonable to expect Port Kembla Outer Harbour to consistently be further away from the main freight catchment area than is Port Botany
- Port Botany to south-west Sydney	110	
Average truck travel speed (kms/hr) for:		
- Port Kembla Outer Harbour to south-west Sydney trip	85	Average travel speed reflects most of the trip occurring along relatively unconstrained highways and freeways (including Masters Road, Springhill Road, Mt Ousley, F6 Freeway, Picton Road and Hume Highways). As such, there is minimal travel through residential suburbs, largely uninterrupted journey (minimal stop-start due to traffic lights) and minimal interaction with passenger vehicles.
- Port Botany to south-west Sydney trip	45	Most of the truck trip occurs over Sydney's relatively congested suburban road network from Port Botany to south-western suburbs. Frequent interruptions due to traffic lights and interaction with passenger vehicles
Port Gate Turnaround Time (minutes) at:		
- Port Kembla Outer Harbour	30	Assume vehicle can enter/exit Outer Harbour in 30 mins due to no truck queue congestion
- Port Botany	50	Average gate in/gate out time at Port Botany. Reported in Sydney Ports Corporation, 2005-06 Logistics Review
		Overall, it is likely that a truck can enter/exit the Port Kembla Outer Harbour (for loading/unloading) in less time than it could a Port Botany (due to waiting time/delays at a congested Port Botany)

Parameter	Number	Assumption/Comment/Source
Hourly truck driver cost rate (2007 $/hour)	$64	Victorian Essential Services Review of Port Planning Final Report, Dec 2007,
% of truck driver time spent driving and at Port	60%	Driver assumed to spend time loading/unloading the vehicle at shipper premises, filling out paper work, undertaking vehicle checks and taking rest breaks. These activities are included in a driver's hourly rate, and therefore need to be removed for the purpose of this exercise
Tonnes per truck (tonnes)	40	9-axle B-double vehicles assumed to be utilised for trips between shipper premises and port. A fully laden B-double travelling at Higher Mass Limits can carry approximately 40 tonnes of cargo.
Annual inflation	4%	An annual inflation allowance is required to capture rising truck driver wages over time.

The assumptions from Table 6 are used to generate estimate of truck trip time savings for journeys to and from the Outer Harbour. Table 7 shows that a typical B-double vehicle can undertake a round trip to and from the Outer Harbour in 0.8 hours less than it would take if the same truck delivered/picked up freight at Port Botany. This reflects less time spent driving and waiting at the port.

TABLE 7: TRUCK TRIP TIME BENEFITS FOR JOURNEYS TO AND FROM OUTER HARBOUR

Variable	Number
Driving Time (hrs)	(hrs)
- Port Kembla Outer Harbour (one way)	1.0
- Port Botany (one way)	1.2
- Port Kembla Outer Harbour (round trip)	2.0
- Port Botany (round trip)	2.4
- Additional time (per one-way trip)	0.2
- Additional time (per round trip)	0.4

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Variable	Number
<u>Port Gate Turnaround Time (hrs) at:</u>	(hrs)
- **Port Kembla Outer Harbour**	0.5
- **Port Botany**	0.8
- **Additional time (per round trip)**	0.3
<u>Total Trip Time (hrs)</u>	(hrs)
Port Kembla Outer Harbour:	
- Driving	2.0
- Port Gate	0.5
- Total trip time	2.5
Port Botany:	
- Driving	2.4
- Port Gate	0.8
- Total trip time	3.3
Additional time per round trip if Port Botany is utilised) (or round trip time **savings** if Outer Harbour is utilised	0.8

The assumptions from Table 6 are used to generate estimate of truck trip time savings for journeys to and from the Outer Harbour. Table 7 shows that a typical B-double vehicle can undertake a round trip to and from the Outer Harbour in 0.8 hours less than it would take if the same truck delivered/picked up freight at Port Botany. This reflects less time spent driving and waiting at the port.

The trip time per vehicle savings estimated at Table 7 can be used to calculate total trip cost savings (or economic resource use benefits). Trip cost savings depend on the number of trips, proportion of driver time dedicated to driving and being serviced at port gate, total time saved and hourly driver costs. (The number of trips was derived by dividing the total south-west Sydney freight task at Figure 4 by fully-laden B-double carrying capacity of 40 tonnes per vehicle).

Table 8 displays the resultant economic benefits of utilising the Outer Harbour. The economy would benefit by around $2 million in the first year of the Outer Harbour's operation.

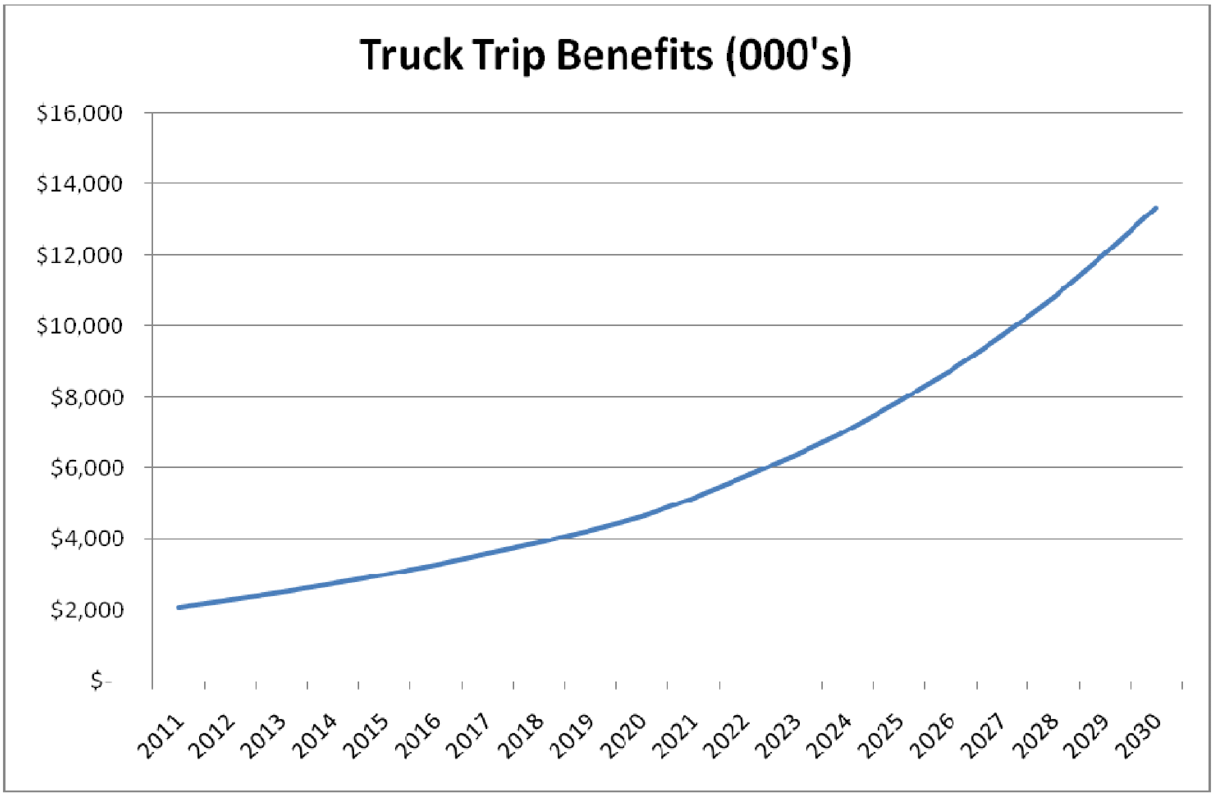
TABLE 8: TRUCK TRIP COST SAVINGS IF OUTER HARBOUR IS DEVELOPED

Variable	Year (2011)
Number of B-double round trips	39,277
Proportion of Driver's Time spent Driving and at Port Gate (assumption)	70%
Total trip time saving (if Outer Harbour is adopted over Port Botany) (total hrs saved)	27,964
Hourly truck driver cost rate ($/hr)	74.6
Trip Time Cost Savings (undiscounted $)	$2,085,508

2.6.4 Time Profile of Benefits

Using the above approach, it is possible to generate a time series profile of economic benefits attributable to the Outer Harbour (Figure 5).

FIGURE 5: STREAM OF ECONOMIC BENEFITS OF DEVELOPING THE OUTER HARBOUR



Source: Meyrick analysis, 2008

Due to insufficient data being available in the required timeframe, it is not possible to complete a formal benefit cost assessment (to give a net present value estimate of developing the Outer Harbour). This is because upfront infrastructure costs would logically be required for developing extra bulk and container facilities at Port Botany – as it is Port Botany that is the comparator facility. Apart from the fact that there would be no available land on which to develop extra berth facilities at Port Botany (after it reaches capacity in 2018 to 2020), all things being equal however one would expect the cost of developing the required facilities to be lower at Port Kembla than in Sydney. In addition, it is very likely that it would become increasingly unpalatable for Sydney's port facilities to handle substantial extra volumes of bulk commodities. This reflects community amenity, standards and expectations.

2.6.5 Non-Monetised Benefits and Costs

Table 7 displays the main non-monetary economic benefit cost assessment of the Port Kembla Outer Harbour project.

TABLE 9: NON-MONETISED BENEFITS AND COSTS OF OUTER HARBOUR PROJECT

Cost/Benefit	Description	Rating
Reduced emissions (due to reduced numbers of truck trips)	The use of Outer Harbour to facilitate bulk, general and container cargo movement and handling is likely to require less truck trips (to move a given volume of freight) than would be the case if the Outer Harbour were not developed. This is due to journey time benefits associated with utilising the Outer Harbour in servicing the important and growing south-west and west Sydney catchment freight demand and supply areas.	Moderate

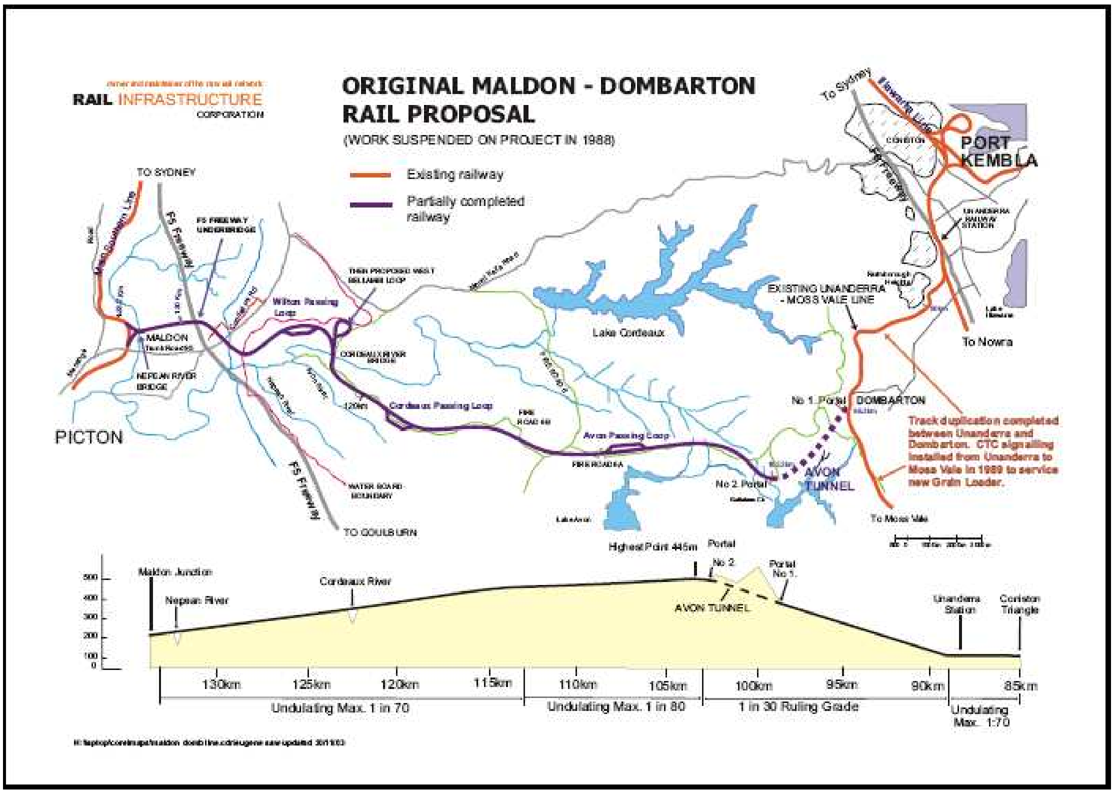
3. MALDON DOMBARTON RAIL

3.1 The project

One of the top four projects chosen by the Illawarra Transport Infrastructure Priorities Forum for funding through the Infrastructure Australia process was the completion of the Maldon Dombarton railway. The NSW government began building the 35 kilometre track in 1983 but the construction project was cancelled in mid-1988, after approximately $30 million had been spent on it in anticipation of booming coal outputs in the Maldon area, which were never realised.

If the project were to be completed it would link the main Southern line (National Network) at Maldon (near Picton, to the southwest of Sydney) to the existing 15 kilometre section of dual standard gauge track from Dombarton to Port Kembla.

FIGURE 6: ORIGINAL MALDOM DOMBARTON RAIL PROPOSAL



Source: Sharon Bird MP Federal Member for Cunningham, Maldon-Dombarton Pre-feasibility Study Terms of Reference news release, 15 August 2008

It is understood that remaining works to complete the line include construction of about 30 kilometres of track, a 4 kilometre tunnel, bridge crossings of more than 430 metres over the Cordeaux and Nepean Rivers, an underpass under the F5 and a number of bridges over roads and rail tracks.

3.2 Rationale for the project

Road is more suitable than rail for low volume, time sensitive freight – such as supermarket products – that travels relatively short distances. This is part of the critical role that Picton Road plays and will continue to play. However, there are a number of export or import commodities that could potentially be transported efficiently via the railway linkage. Typically rail is most suitable for high volume bulk commodities.

One of these could be coal exports that are currently transported by Picton Road or Appin Road. As discussed in section 4.3.3, if some of these were diverted to rail, traffic on Picton and Appin Roads would be reduced a little. The Maldon Dombarton line could provide significant relief to the freight task on the Illawarra line that is currently constrained by competition with commuter trains, and could free up more commuter capacity on the Illawarra line. According to Port Kembla Coal Terminal, the Maldon Dombarton railway line would enhance receival capacity by transferring some of the volumes from road, which is currently constrained by curfews, and which concentrate road receival during limited hours, to rail for which there would be no such constraints (Port Kembla Coal Terminal Ltd, Submission 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, 2006).

On this basis PKCT's submission to this major freight inquiry in 2006 was as follows:

> *PKCT's position today is one of support for the Maldon Dombarton link. It is no longer an either/or situation. PKCT needs access to increased road and rail receival capability if it is to provide an efficient service to our customers and importantly to realise our growth potential in an environment of growth elsewhere in the port. PKCT supports these recommendations and argues that there is a strong case for the completion of the Maldon Dombarton rail link (PKCT, February 2006).*

At the time that the original construction project for the Maldon Dombarton line was commenced, coal constituted a very high proportion of Port Kembla's trade volumes. However, as discussed in more detail in section 4.3.3 and 4.3.4 of this submission, the recently established motor vehicle trade along with a number of potential new bulk commodities and containers is increasingly diversifying the port's trade base. Some of these bulk exports originate in south western NSW and if volumes are high enough, it may be commercially and economically feasible to transport them by rail to the port. In addition, it is possible that the rail line may also prove to be a viable alternative for coal producers at the southern end of the Hunter region that currently export through Newcastle Port.

More generally, consideration for the completion of the railway line is consistent with the NSW government's policy of ensuring that road and rail infrastructure linked to the port is adequate to support the growing freight task following the transfer of the motor vehicle import trade and other general cargo to Port Kembla from Port Jackson. In 2005 for example, the report of the NSW State Development Committee into Port Infrastructure in New South Wales considered these freight issues. The Committee made the following two 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, and,

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 (NSW Legislative Council, Standing Committee on State Development, Inquiry into Port Infrastructure in NSW, June 2005).

3.3 Recommendation

Stakeholders in the Illawarra strongly support the recently announced pre-feasibility study that has been commissioned by the federal government as part of its AusLink program. The purpose of the study is to assess the economic viability of the Maldon-Dombarton rail line in the context of the growth in coal export demand, the growth of western and south western Sydney as a freight and business hub, and the expansion of Port Kembla following the transfer of vehicle imports from Port Jackson.

The investment of $300,000 to fund the study reflects the importance of the Maldon-Dombarton rail line as a project of national economic significance. Although we believe that it would be premature and counterproductive to pre-empt the outcomes of this pre-feasibility study, stakeholders in the Illawarra region request the inclusion of this project in the national infrastructure audit.

4. PICTON ROAD UPGRADE

4.1 Goal of the proposed Picton Road upgrade

The aim of the proposed project is twofold:

- to enhance the capacity, efficiency and safety of Picton Road (Main Road 95) so that it can support the growing movement of import and export trade between Port Kembla Port and Western Sydney, and at the same time also
- provide a safe and efficient link for commuters and others travelling between Wollongong and Western Sydney.

4.2 Background

Picton Road (Main Road 95) has long served as an important commuter and service linkage between the Illawarra and the south and south western areas of Sydney. It is one of two state roads that connect Wollongong and Port Kembla Port with western and south western Sydney via the Hume Highway the other is Appin Road (Main Road 177). However, according to the Roads and Traffic Authority, Picton Road is a better route for accessing the Hume Highway. While Appin Road travels through the towns of Appin and Campbelltown, and the sprawling urban areas that surround this regional centre, Picton Road offers easier access to the Hume Highway. This is because none of the residential areas located along the road break the 27 kilometre journey between Wollongong and the Hume Highway. This alone makes Picton Road a socially preferable interregional corridor to Appin Road.

Appin Road also provides a low level of service (LoS E) in terms of significant intersection delays and travel speeds of 35% of free flow speed or lower, and by contrast with Picton Road, carries a lower traffic load (about 9,500 vehicles per day), and a lower proportion of heavy vehicle traffic (Leafs Gully Power Project Environmental Assessment, Ch 10 Traffic and Transport, URS for AGL, October 2006).

4.2.1 Picton Road is becoming a major freight access route

Three factors have combined to increase the importance of Picton Road as a freight corridor of national importance.

Firstly, the recent development of Port Kembla Port, particularly through the transfer of the motor vehicle import trade from Port Jackson has increased its role as an important access route to and from the port. The facilities that have been developed at the port are proving to be very significant generators of economic development in the Illawarra (Analysis on the impact of increased trade resulting from inner harbour developments was estimated in 2007 to boost regional employment by approximately 1000 additional jobs) in that they are generating considerable interest from a number of other importers and exporters who are seeing the benefits of Port Kembla for handling bulk and some containerised commodities. As a consequence, the inner harbour port and land side facilities have reached capacity much more quickly than expected, and the port corporation is in the process of planning for the development of new outer harbour facilities to support this demand.

Secondly, western and south western Sydney are the sources of the highest demand for Sydney's imports of general consumables as well as industrial inputs (see Table 10 below), and Port Kembla Port is providing a viable alternative entry point for these imports that avoids the time and cost caused by having to contend with congestion on Sydney's roads between Port Botany and the consumption locations.

TABLE 10: ORIGIN AND DESTINATION OF ROAD FREIGHT TRANSPORT IN NSW, 2004, 2025

Area	Existing % (2004)	Future % (2025)
Botany	22.1%	23.5%
City, Eastern Suburbs and South Sydney	2.8%	1.2%
Southern Suburbs	1.1%	0.7%
North shore and NW Sydney	5%	2.9%
Inner West and Central West Sydney	17%	20.4%
Industrial West, Blacktown, Penrith	22%	28.4%
Liverpool and South West	16%	18.9%
Interstate and Intrastate	4%	4%

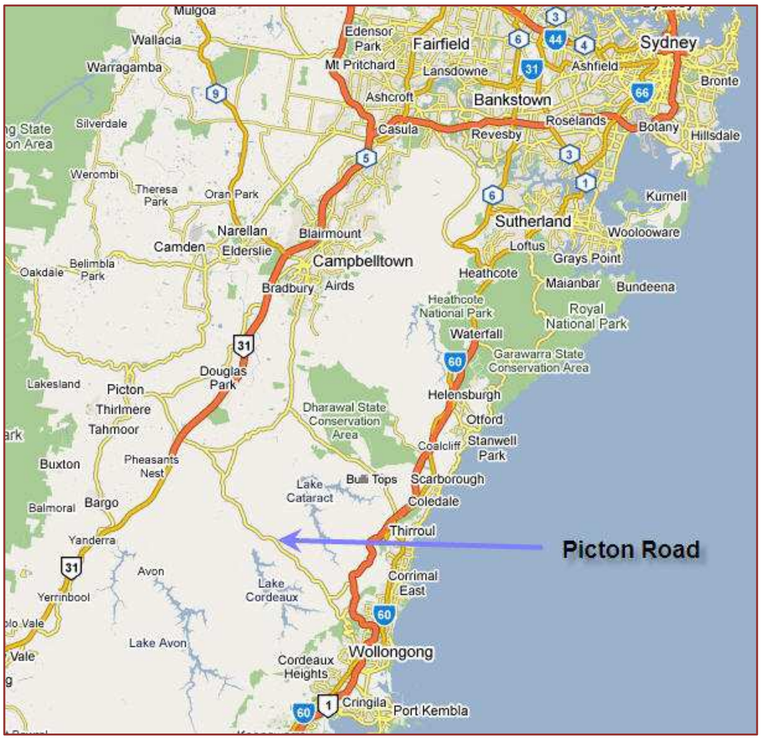
Source: Sydney Intermodal sustainability and opportunities for growth, PATREC Nov 2004, Simon Barney, Sydney Ports Corporation

In addition these parts of Sydney's metropolitan area are also the location of much of Sydney's industrial activity, including manufacturing, distribution and warehousing. Picton Road is the key transport linkage between Port Kembla and Wollongong and these areas of Sydney. Apart from supporting the transfer of motor vehicle imports to pre-delivery inspection sites at Ingleburn and Minto it also supports the movement of domestic freight travelling from west and south western Sydney and destined for Wollongong and the broader Illawarra region.

Thirdly, the port is also shaping up to be an attractive export gateway for a range of bulk resources from the western and south western region of NSW. Most of these mining projects will need to rely on road rather than rail transport and the most efficient route for accessing the port is Picton Road.

However, unless Picton Road is significantly upgraded in the short to medium term, it will struggle to support the growing mix of passenger, light commercial and heavy freight traffic that travels on it.

FIGURE 7: PICTON ROAD AREA MAP



Source: Google maps, 2008

4.3 Problem identification

4.3.1 High growth in traffic volumes

Currently, Picton Road carries about 14,000 vehicles per day with 20% of these being heavy vehicles. Over the last eight years traffic volumes on Picton Road have been growing at a rate of 3.6% per year. This is higher than the rate of growth of the Sydney Wollongong AusLink Corridor where traffic is estimated to grow at about 2.5% per year over the next 20 years. The trend for Picton Road is expected to continue for all traffic but heavy vehicles are expected to form an increasing proportion of this traffic flow.

4.3.2 Road safety is a major concern

At 20%, heavy vehicle traffic on Picton Road constitutes a high proportion of the traffic mix, and as a major freight and commuter corridor, its relatively poor safety record suggests that it is struggling to cope with the passenger and freight traffic demands being placed on it. Between January 2005 and December 2007 there were 90 crashes and four fatalities on the corridor, and this year alone there have been three fatalities. According to an RTA presentation, made in April 2007, the high incidence of crashes is due to limited overtaking opportunities and the high mix of heavy vehicles. This crash record is a major concern for the community (Figure 8).

It is also a major concern for importers and exporters that rely on the road to move their commodities safely and efficiently between Port Kembla Port and key areas of consumer and industrial demand in western and south western Sydney. As freight volumes and therefore traffic volumes grow in the future the shortcomings of the road will only worsen, further impacting on public safety and transport efficiency.

FIGURE 8: FATAL CRASHES PICTON ROAD 2008

Source: Sydney Morning Herald, April 21, 2008, Illawarra Mercury June 6, 2008

The diminishing capacity of the road to handle its dual passenger and freight roles in the future was first identified two years ago, by the Sydney Wollongong AusLink Corridor Strategy which suggested that expansion of port activities as well as expansion of industrial activity in south western Sydney are likely to "put increasing pressure on sections of the corridor and arterial links such as Picton and Appin roads" (Auslink, p13). Although the Corridor Strategy recommended increasing the capacity of each of the roads as a short term priority, it found that Picton Road is likely to be under more pressure than the alternative east west route and will therefore require greater emphasis in the short to medium term (AusLink, page 14).

4.3.3 Likely growth of Inner Harbour trade

This Corridor Strategy judgement about growing pressures on the road was in large part predicated on the transfer of the motor vehicle import trade from Port Jackson to Port Kembla Port. At the time that the AusLink Corridor Strategy was written, this trade was estimated at about 250,000 vehicle imports which would generate an additional 93,750 truck movements per year, or approximately 120 B-Double and 250 rigid/single articulated daily return trips travelling on either Picton or Appin Road.

However, according to Port Kembla Port Corporation these motor vehicle import figures will very likely be exceeded by the end of 2008/09 and are expected to grow to about 323,000 by 2014/15. In addition a number of other commodities not unaccounted for by the AusLink Corridor Strategy — and therefore not included in traffic forecasts for the road — will further increase pressure on the road as soon as next year.

Apart from the motor vehicle imports, previously unaccounted for volumes of export coal and grain are likely to be transported by road via Picton Road on their way to the port.

By the end of the current financial year, 14 million tonnes of coal is expected to be exported through Port Kembla Coal Terminal. This is nearly 2 million tonnes higher than had been expected in 2006, and is expected to be maintained at least until 2014/15 – the latest year of the port corporation's trade forecasts. About 40% or 5.6 million tonnes of these coal exports reach the port by road, either via Appin or Picton Road.

As a result of Pacific National's withdrawal of rail services an estimated 200,000 to 300,000 tonnes per year of export grain will be transported by road to the port, with virtually all of this travelling along Picton Road.

Three other commodities that will come on line over the next one to two years are biodiesel, soy bean meal and timber. In 2010, about 250 kilolitres per year of biodiesel produced from imported soybeans at Port Kembla port will be distributed throughout NSW by road with much of it destined for Sydney's metropolitan area. About 200,000 tonnes of the soybean meal by product will also be distributed throughout NSW. Both of these outputs from Port Kembla have an expected 40 year life, while the 100,000 tonnes per year timber imports, which will come on line in 2009, are likely to continue for at least 20 years. All of these commodities will make use of Picton Road on their way to Sydney and further afield in NSW and will generate an additional 410 heavy vehicles per day.

4.3.4 Potential Outer Harbour freight growth

Bulk commodities

As discussed in section 2 of this submission, Port Kembla Port Corporation has recently completed a master plan for the development of a new outer harbour facility which is intended to handle a combination of bulk, general (break bulk) and containerised cargo. Pending the construction of the first stage of the Port Kembla Outer Harbour, a number of bulk commodity exports are likely to be handled by the port, and all of these will make use of Picton – and to a lesser degree, Appin Road. For example by 2012, 50,000 tonnes of gypsum will travel from Marulan to the port and 200,000 tonnes of the downstream product will then be distributed throughout NSW.

The feasibility of exporting about 200,000 tonnes of iron ore from a mine in Cowra is currently being assessed. If this project proves feasible, exports are likely to begin in 2011. Because it would be uneconomical to transport this volume by rail, the only realistic alternative would be to transport this export by road to the port.

It is understood that a 4 million tonne per year coal export prospect from Albury is also at pre-feasibility stage, and if this prospect is realised it would come on line in the next few years. In addition, pending the outcome of feasibility assessments which are nearing completion and then planning approval being achieved, a, 1 million tonne per year export project with a probable life of 30 to 40 years, could come on line in 2011. This bulk export would be transported by road and therefore would make use of Picton Road in order to reach the port[1].

Container trade

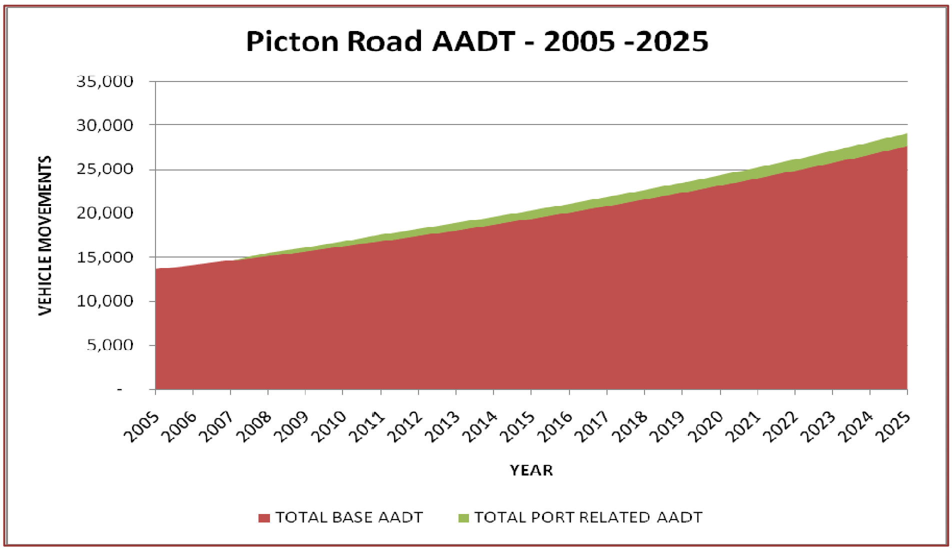
As well as handling bulk commodities, when Port Botany reaches capacity in 2015-16, the Outer Harbour is also expected to handle an increasing portion of the state's container trade. The port master plan has upgraded forecasts developed in 2005 to now suggest that even in 2014/15 Port Kembla Port could be handling at least 55,000 TEU instead of the previously forecasted figure of 14,000 TEU. Low case estimates would suggest that this trade would grow to 65,000 TEU by 2020 and then 85,000 TEU by 2030. Trade forecasts typically underestimate growth and so the medium case projections of 116,000 TEU by 2015 growing to 241,000 TEU in 2030 are not an unrealistic expectation for the port.

4.3.5 Impact of port trade on Picton Road traffic

On the basis of medium growth projections for port trade, heavy vehicle traffic volumes moving on Picton Road could be about 566 per day in 2010 moving up to 1486 per day by 2025. As can be seen in Figure 9 below, these port-related freight movements will account for only a small proportion of the total traffic flow traffic.

[1]Port trade data contained in this and the previous section provided as verbal advice by Dom Figliomeni, CEO, Port Kembla Port Corporation, October 2008.

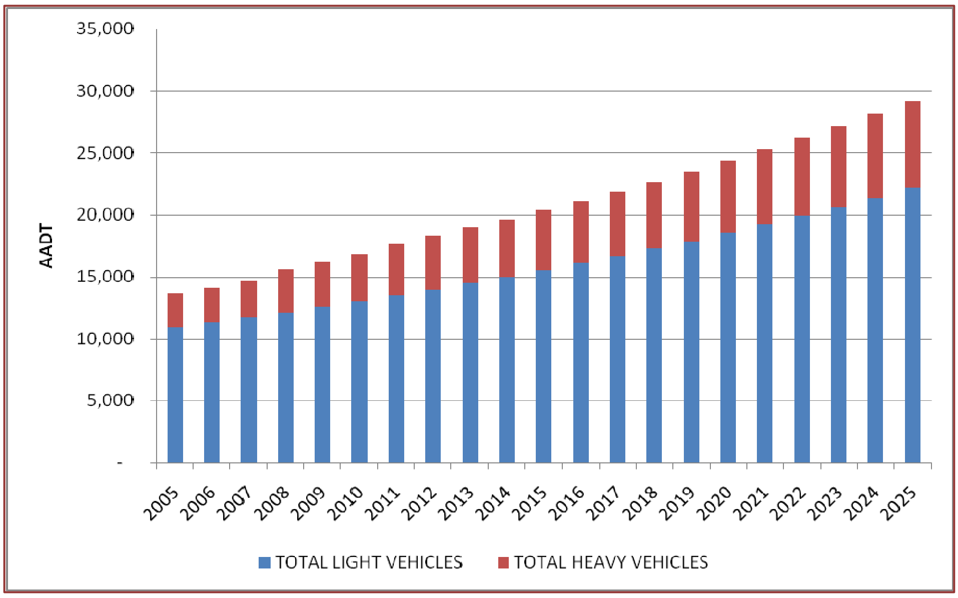
FIGURE 9: PICTON ROAD TRAFFIC VOLUMES: 2005-2025



Source: Meyrick and Associates forecast derived from RTA traffic volumes 2000-2005and PKPC trade forecasts, 2008

However, total traffic volumes will have grown considerably – to just under 17,000 per day by 2010, and by 2025 Picton Road it is estimated to support 29,000 AADT. This represents near doubling of current traffic volumes on the road. However, by as soon as 2010, heavy vehicles will account for 24% of total traffic flow, or nearly one in four vehicles is likely to be a heavy vehicle (Figure 10).

FIGURE 10: PICTON ROAD HEAVY AND LIGHT VEHICLE TRAFFIC VOLUMES: 2005-2025



Source: Meyrick and Associates forecast derived from RTA traffic volumes 2000-2005& PKPC trade forecasts, 2008

These estimates do not take into account additional traffic that will be generated by a recent residential development in the Wilton area adjacent to the interchange between Picton Road and the Hume Highway. The Bingara Gorge Estate consists of 1160 lots on the north eastern side of the Hume Highway and land has been purchased for the development of up to a further 3000 lots on the north western side of the interchange over the next 10 to 20 years. The traffic activity generated by cars entering and exiting Picton Road near the Hume Highway interchange only reinforces the need for this important transport corridor to be upgraded to ensure the free flow of traffic along its entire length.

4.4 Proposed options for addressing the problems

There are three broad options for making Picton Road a more efficient and safer transport corridor for handling the growing passenger and freight traffic volumes that it is carrying and will need to carry over the next 15 to 20 years in supporting the economic development of the Illawarra region and high demand areas of south and south western Sydney.

- Option 1: Introduce a range of minor infrastructural changes and behavioural management initiatives to improve the safety performance of the road

  The RTA Southern Region has established an internal working group to identify solutions to address the adverse road safety history that has emerged along the route in recent years. The options being considered in the short term include median barrier treatments, clear zone improvements, shoulder widening, junction improvements and road surface treatments.

- Option 2: Build additional overtaking lanes in combination with addressing safety performance of the road

  Although there are overtaking lanes on both sides of the road, the route is considered to be constrained by too few overtaking opportunities, especially given the high level of heavy vehicles. In a presentation published in April 2007, the RTA Southern Region acknowledged that

Picton Road needs to be monitored and managed because of the high and growing volume of freight traffic travelling on it and envisaged the possibility of building additional overtaking lanes in the short term.

- Option 3: Upgrade the road to two lanes in each direction between Mount Ousley and the interchange with the Hume Highway

  In acknowledging the role of the road as a transport link of regional significance, an RTA presentation published in April 2007 suggested its possible upgrade to two lanes in each direction but this is in the long term. In the short term only additional overtaking lanes were envisaged.

4.5 Assessment of options

4.5.1 Safety improvement measures

Reducing the crash record of the road is imperative, and in the absence of any major upgrade, the measures considered by the RTA to be the most appropriate ought to be implemented as soon as practicable. Nevertheless these measures are unlikely to materially affect traffic flow per se or the increasing potential for conflicts between passenger and freight traffic.

The net present value of spending an estimated $2 million on blackspot infrastructure improvements aimed at reducing the incidence of crashes on the road would be about $7 million.

4.5.2 Additional overtaking lanes

Building additional overtaking lanes would no doubt increase the capacity of Picton Road and in so doing would increase the capacity of the road but it would perpetuate the safety risks associated with merging of traffic as it enters and egresses the overtaking lanes.

If as well as implementing the safety measures, six additional overtaking lanes (three in each direction) were built, and each was about 600 metres long and about 3.5 metres wide, at a unit cost of $400 per square metre, this option would cost approximately $3.8 million. In addition, the option would include the $2 million of small scale initiatives to improve road safety that comprise Option 1. The net present value of this option has been estimated at $149 million.

4.5.3 Upgrade the road to two lanes in each direction

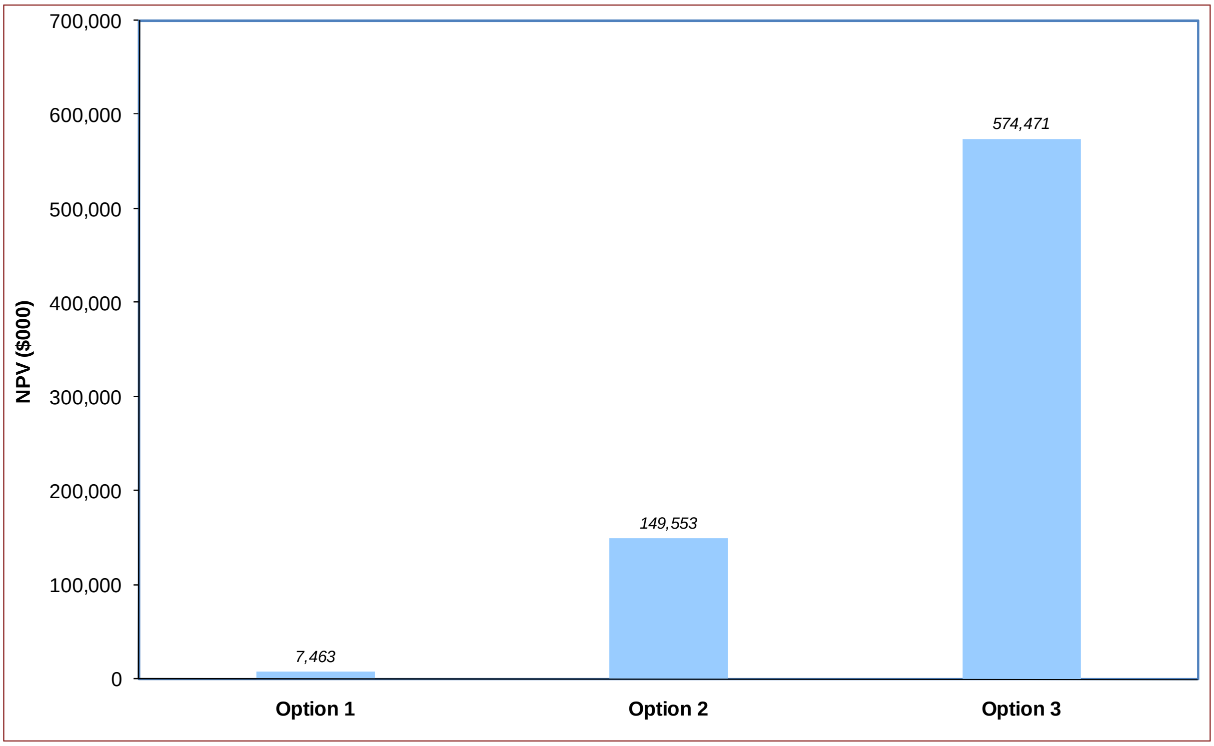
The upgrade of Picton Road to a dual carriageway along the entire length of road from the Southern Freeway (Mt Ousley) intersection to the South-Western Freeway (Hume Highway) interchange is the best of the three options for supporting the expected growth in traffic volumes and improving transport efficiency and safety for both passenger and freight traffic over the next 20 years because it would:

- Increase the overall capacity of the corridor and thus remove constrictions in traffic flow that currently occur due to single lane operation
- Increase the separation between heavy vehicles and passenger vehicles and between vehicles travelling at different speeds
- Reduce the incidence and severity of vehicle crashes by reducing the opportunity for head on collisions or for collisions resulting from the merging of traffic as it enters and egresses overtaking lanes.

At an estimated cost of $5 million per kilometre, the cost of this option would be around $135 million. Ongoing road maintenance would also increase under this option: we have assumed that these costs would double, in line with the increase in road area: this is likely to be a slight over-statement of the level of cost increase.

The net present value of this option was assessed at $574 million (Figure 11).

FIGURE 11: NET PRESENT VALUE OF ALTERNATIVE OPTIONS



Source: Meyrick analysis, 2008

4.5.4 Wider Economic Benefits

There is insufficient data available to support a credible quantification of this project. However, the nature of the project is such that significant agglomeration benefits might be expected to flow from it. The project will reduce the effective distance between two major metropolitan centres, and should allow a freer flow of goods and services between them.

4.6 Initiative profile

The proposed initiative is for the Federal Government to fund the upgrade the 27 kilometre stretch of Picton Road between Mt Ousley Road and the Hume Highway Interchange by widening the road from its current configuration of two lanes with occasional overtaking lanes, to a four-lane divided carriageway to be constructed over two years in 2009 and 2010 at an approximate cost of $135 million.

4.6.1 Initiative rating and justification

	Rating	How does the initiative meet/ not meet the strategic priority?	Provide data and evidence of how the initiative meets/does not meet the strategic priority	Provide an outline of how the initiative is dependant on policy, regulatory, demand pricing, efficiency and/or capital investment initiatives.
Expand Australia's productive capacity	Highly beneficial	Picton road duplication will expand the capacity for bulk and, later, containerised imports and exports to be transported between Port Kembla Port and the western and south western areas of Sydney which are the sources of Sydney's and NSW's highest consumer demand, industrial activity	See Figure 11 and attached spreadsheet for NPV data	The initiative is dependent on investment of approximately $135 million which would result in a NPV of $574 million over 30 years
Increase Australia's productivity	Highly beneficial	Duplication of the road would improve average travel speed, freight costs and costs associated with crashes on this major east-west transport corridor.	See figure 11 and attached spreadsheet for estimated travel time and crash reduction benefits	

Diversify Australia's economic capabilities	Highly beneficial	As part of an integrated land and port transport system, the initiative will increase the range of transport corridors for handling NSW imports and exports by establishing an efficient road transport connection to Port Kembla. It will also improve the transportation linkages for: passengers and freight travelling between western and south western Sydney, regional NSW and the Illawarra passengers and freight travelling between the NSW Highlands via the Hume Highway and the Illawarra	See Sections 4.3.3and 4.3.4 for evidence of export and import trade diversification	
Build on Australia's global competitive advantages	Moderately beneficial	The initiative will provide a secure and efficient transport system for Australia's internationally competitive coal export industry. It will support the efficient movement of other bulk product imports and exports including soybean mill, gypsum, and possibly iron ore.	See Sections 4.3.3and 4.3.4	

Develop our cities and/or regions	Highly beneficial	Given the high proportion of import and export commodities that either originate in or a destined for western or south western Sydney or further inland, and depend on road transport for access to the port, Picton Road is a critical part of the import/export supply chain. Its duplication will therefore be a critical factor in enabling the ongoing – and much needed economic development of the region and the state as a whole.	The operation of the Port of Port Kembla in 2005/06 generated, in terms of output, an estimated total impact on the Illawarra economy of approximately $558 million and around $670 million on the NSW economy as a whole (Econsearch 2007).Port activities also created 1500 direct and 1300 indirect jobs at that time. These impacts on the regional economy are likely to substantially increase in line with trade growth at the port over the next 20 years.	
Reduce greenhouse emissions	Slightly beneficial	The initiative will enable smoother driving conditions which should result in small but difficult to quantify reductions in exhaust emissions It will enable the efficient distribution of ethanol fuel from the port to throughout Sydney. The exact impact of this would be difficult to quantify with the information available.		

Improve social equity, and quality of life, in our cities and our regions	Highly beneficial	Duplication of Picton Road will have an indirect impact on social equity by supporting improved economic development of the region as discussed two rows above in the this table. For trade that is transferred from Port Botany to Port Kembla, it is likely to reduce congestion on Sydney's main port access freight routes. A duplicated Picton Road would handle the increasing traffic load more safely and efficiently	See Sections 4.3.3and 4.3.4 for details of import and export trade better supported by the road once duplicated See section 4.3.5 for increased traffic volumes better supported by duplication See section 4.5.3 and figure 10 for details of significant economic benefits to be derived from the project	
Linkages	Highly beneficial	The initiative is a critical adjunct to the recently developed inner harbour facilities at Port Kembla port and the unexpected growth in trade that will rely on the Picton Road. The same is the case for the Outer Harbour Development and the export and import trades that this will serve.	See section 4.2.1 for evidence of the linkages that Picton Road supports between Port Kembla/Wollongong and western and south western Sydney as well as the demand for road transport in these areas.	

4.7 Appraisal Key Results and Assumptions

4.7.1 Overview

Stakeholder: *Regional Development Australia Committee – Illawarra*; On behalf of the Illawarra Transport Infrastructure Priorities Forum.

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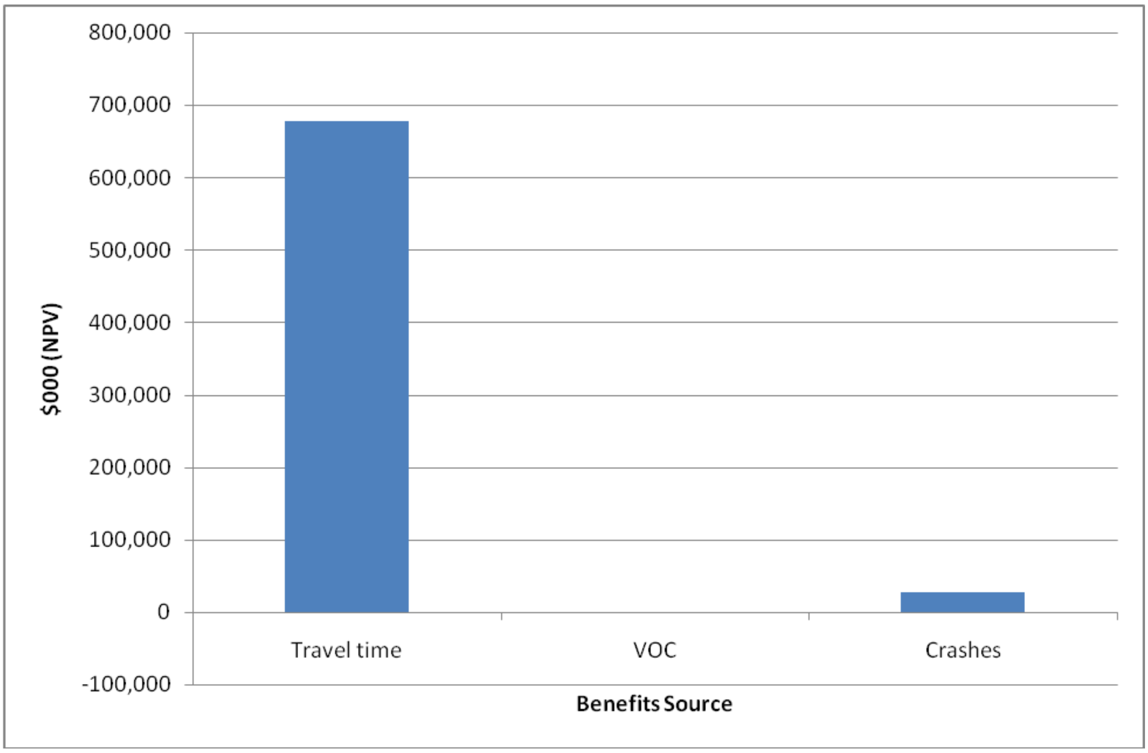
4.7.2 Assumptions underlying monetised benefits and costs

Item	Assumption
Key drivers	Traffic increase, especially increased freight traffic associated with Port Kembla Outer Harbour Development. Slow and hazardous conditions on existing road.
Base case	Maintain existing road
First year of construction	2009
Last year of construction	2010
Discount rate	7% (real)
Appraisal period	30 years
Remaining life	Assumed zero at end of evaluation period
Residual value	Zero
Benefit ramp up	See chart below
Capital cost	$135 million
Maintenance cost	See attached spreadsheet
Operating cost	See attached spreadsheet
Benefit components	See chart below
Cost & benefit time streams	See chart below
Other	n.a.
Related initiatives	Port Kembla Outer Harbour Development

4.7.3 Details of costs and benefits

As is shown in Figure 12, the major source of benefit will be in travel time savings. There would be no vehicle operating cost savings as duplication would enable faster travel. There are also modest cost savings stemming from a reduction in the incidence of crashes.

FIGURE 12: SOURCE OF BENEFIT



Taking the benefits and costs as a total, Figure 13 shows a very significant net benefit being realised over the medium term. If the project were to proceed in the next couple of years, the analysis suggests a strong net benefit profile particularly through the early to mid 2020's.

FIGURE 13: TIME PROFILE OF COSTS AND BENEFITS

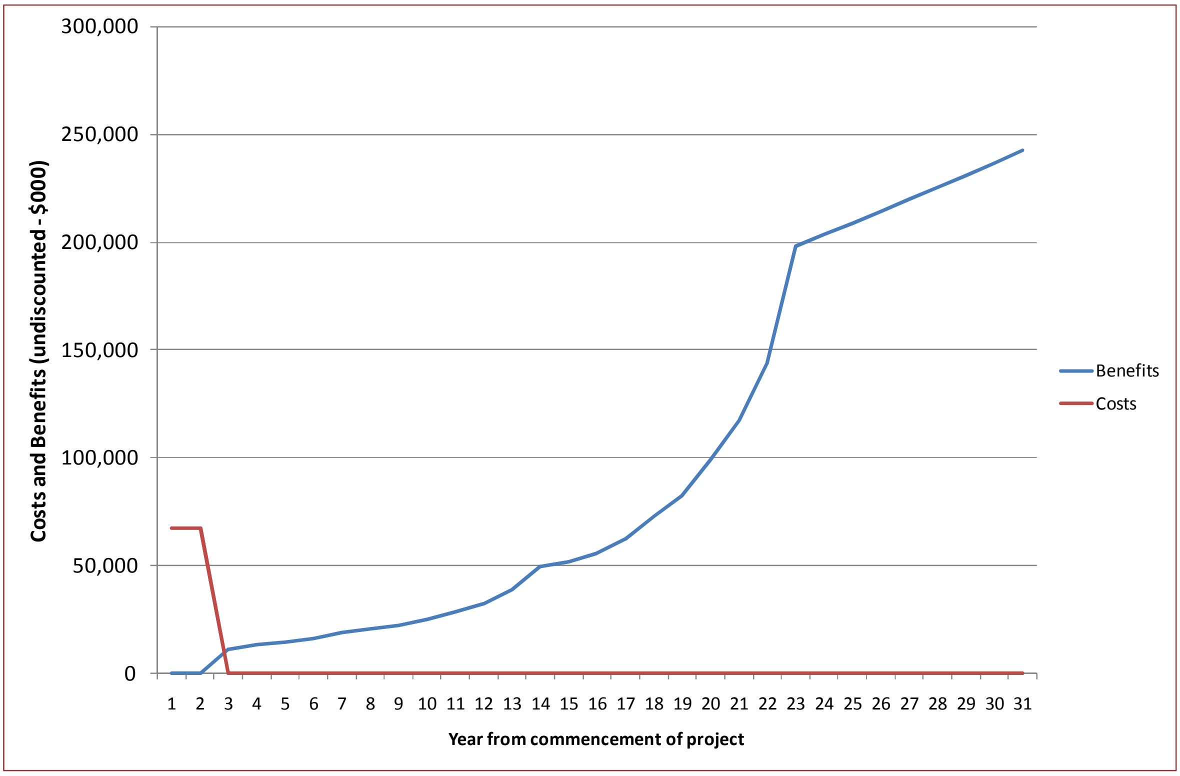


Table 11 clearly demonstrates high BCR at a range of discount rates. Even at high discount rate of 10% the project would realise a BCR of 3.3%.

TABLE 11: COST BENEFIT ANALYSIS RESULTS FOR PICTON ROAD DUPLICATION

	Discount Rate		
	4%	7%	10%
BCR	9.4	5.4	3.3
NPV ($000)	1,121,753	574,471	291,669
NPV/$ of Capex	8.3	4.3	2.2
IRR	19%		

The breakdown of the BCR components is shown in Table 12 while

Table 13 provides useful guidance on the relative robustness of the base case BCR results. At substantially reduced traffic levels (-50%), a BCR greater than 1 (1.7) is still realised.

TABLE 12: MONETISED BENEFITS AND COSTS FOR PICTON ROAD DUPLICATION

	Value ($000)	Share
COSTS		
Capital Costs	130,556	99.8%
Operating/Maintenance cost	316	0.2%
	130,872	100.0%
BENEFITS		
Time savings	1,297,154	97.8%
Vehicle operating costs	-642	0.0%
Reduced crash costs	29,921	2.3%
	1,326,433	100.0%

TABLE 13: SENSITIVITY TEST

Test No	Description	BCR	NPV ($000)
0	Base	5.4	574,471
1	Discount Rate 4%	9.4	1,121,753
2	Discount Rate 10%	3.3	291,669
3	Capex + 25	4.3	541,825
4	Capex -25%	7.2	607,117
5	Traffic Growth -50%	1.7	93,121
6	Traffic Growth +50%	10.1	1,193,396

TABLE 14: NON MONETISED BENEFITS AND COSTS

Cost/Benefit	Description	Rating
Reduced emissions	Smoother driving conditions should result in small but difficult to quantify reductions in exhaust emissions	Low

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