chapter 10

10. Funding and delivery options

The Study Team has explored the capacity of the public and private sectors to fund the projects recommended by the EWLNA and considered whether the construction industry has the capacity to deliver these projects.

The projects recommended by the Study Team are very large by Australian and international standards:

- Public transport projects would cost around $8.5 billion (in 2007 dollars)
- Road projects would cost around $9.5 billion (in 2007 dollars).

The Study Team notes that it would be neither efficient nor prudent to build and pay for the entire recommended rail tunnel and road connection as one giant project. Staging the projects over time ensures that each project is a manageable size and does not place a disproportionate strain on the construction industry, while still enabling economies of scale and innovation. It also enables the Victorian Government to spread its funding requirements over many years and to manage financial risk by contracting in smaller elements. Future governments can adjust these timing decisions in response to the prevailing circumstances, including the impacts of future downturns in the economic cycle.

A relevant precedent for funding such a large step-up in the rail network is the Melbourne Underground Rail Loop. This was delivered by a special purpose statutory authority that borrowed the money required for construction and received revenue from the following sources in order to repay the loans:

- Melbourne Metropolitan Board of Works (MMBW) – rates levy across the metropolitan area (notionally a one-quarter share, reduced to 15 per cent after completion and later reduced to zero)
- Melbourne City Council (MCC) – rates levy for CBD properties only (started as a notional one-quarter share, which ended up being collected across the municipality and only contributing a 10 per cent share, later reduced to zero)
- A special levy on suburban rail fares of one cent per trip
- State share – the balance.

The MMBW and MCC shares were reduced and eventually abandoned due to a number of difficulties, including Victoria's poor financial position in the early 1980s and the need to consolidate debt, leaving the state to carry most of the costs of constructing the loop.

Relevant precedents for funding such a large improvement to the road network include the CityLink and EastLink Public Private Partnerships (PPPs). While the use of tolls to fund the recommended projects was canvassed as part of the EWLNA, the Study Team has not assumed that these projects would be delivered by the private sector in the same manner as CityLink and EastLink. Other smaller scale projects, such as the Western Ring Road and the Geelong and Craigieburn bypasses have been funded by a combination of Commonwealth and State payments, with no tolls.

The Commonwealth Government also has a significant role to play in the development of future EWLNA recommended options. Infrastructure Australia is an advisory council to the Commonwealth Government that will develop a strategic blueprint for future infrastructure and facilitate its implementation in partnership with the states, territories, local government and the private sector. Infrastructure Australia will also review the extent to which governments can better facilitate infrastructure investment, including through public-private partnerships and improved planning and approval processes. Given the scale of the EWLNA recommended projects, this contribution is likely to be extremely valuable. The Study Team notes that the Commonwealth Government's recently released Transport Policy Framework – A New Begining, nominates the east-west corridor as a possible priority national infrastructure project for consideration by Infrastructure Australia.

The Victorian Government has strongly supported the Commonwealth AusLink program and its role in developing the national transport network. Given the national significance of Melbourne's east-west corridor, the Victorian Government could reasonably expect AusLink funding to be forthcoming for at least part of these projects over the medium to long term.

The EWLNA Study Team has also noted preliminary comments by the Garnaut Climate Change Review that the introduction of an emissions trading scheme in Australia has the potential to generate a very substantial amount of government revenue. While noting that there will be competing priorities for this revenue, the review states that 'support for public infrastructure' is one area where revenue could be directed. This suggests that such a trading scheme could result in a contribution to transport infrastructure. The Victorian Government should monitor developments in this area.[1]

1. Garnaut, Ross (2008), *Emissions Trading Scheme Discussion Paper*, Garnaut Climate Change Review, Canberra

It is important to note that the EWLNA was not intended as a 'business case' to support a financial commitment to any particular project. If the Victorian Government adopts the Study Team's recommendations, a number of processes would need to occur, including relevant environmental assessments and the completion of business cases to support government investment and to identify the best value for money in procuring assets and services.

Accordingly, the Study Team has not made any recommendation on whether, or to what extent, the private sector should participate in the financing of the projects and whether PPPs are the best delivery option. However, given the scale of the projects, it is likely that funding would be required from both the public and private sectors for the projects to be delivered. While there is clear precedent for private sector participation in the delivery of new road infrastructure, there are fewer precedents for private rail investment.

Clearly, the amount of money required to pay for construction of the projects is beyond the usual annual Victorian state budget. An alternative would need to be found, such as funding construction through external financing (including debt) sourced through either the public or private sector. Delivering the recommended EWLNA projects in stages over time would assist in better matching the funding task with the capacity of the public and private sectors to deliver.

The Study Team's conclusion is that for the recommended projects to proceed, it is likely that new sources of external finance will be required to fund construction of the projects. Any budget funding would then need to be supplemented by new revenue sources in order to repay the external finance. These sources are explored below and are presented to the Victorian Government as a 'menu' of options that should be considered. Before proceeding with some or all of the EWLNA recommended projects, the Government would need to determine which revenue options should be further developed in the business case stage.

As governments no longer engage in direct construction activity of this scale, the private sector will be involved in the construction of any projects that proceed. The Study Team consulted with representatives from a number of large Australian and international construction companies to identify issues relevant to industry capacity. The results of those considerations are also presented below.

During the Study Team's consultations with the financial and construction industry about its capacity to deliver these large scale projects, the question was often raised about the Victorian Government's ability to deliver or – more accurately – procure such projects. Industry expressed the strong view that for very large projects, where significant amounts of money must be expended to bid for the project, it is critical that government processes are of the highest standard. The Study Team has summarised industry feedback below, in addition to the Team's own observations and comments on this matter.

Study Team Findings

The projects recommended by the EWLNA cannot be delivered without new sources of external finance (including debt) to fund the construction of the projects. Any budget funding will need to be supplemented by new revenue sources in order to repay this external finance.

With external finance and new revenue sources, appropriate sequencing and structuring, infrastructure projects of the scale described in this report can be funded prudently and efficiently, and can be delivered by the construction industry.

10.1 The financing task

To determine whether funding new infrastructure of this scale is beyond the means of the Victorian state budget, it is necessary to establish the size of the construction funding task.

As noted above, the Study Team has not made a specific recommendation about whether all or part of the project should be financed and delivered by the public or private sector. At this early conceptual stage of project development, financing has been considered in a broad, generic sense – assuming that debt is used to finance construction of the projects.

Should the Victorian Government proceed further with the recommended projects, it would need to identify the most appropriate funding and delivery model through the business case stage. Considerations relevant at that time would include the current position of the state budget, the level of forecast budget surpluses and the impact such a project could have on Victoria's credit rating.

One of the factors to be considered at the business case stage of the EWLNA recommended projects is the preferred allocation of risk between the public and private sectors and the value of transferring relevant risks. Recent PPP funded projects highlight the protection given to taxpayers by this delivery method. Under more traditional delivery methods, the major problems that occurred during the construction of the Burnley tunnel, the Lane Cove tunnel collapse and the Southern Cross Station cost overruns would have resulted in significant costs to taxpayers; instead, these costs were borne mostly by the private sector.

The following calculations are based on the notional cost of borrowing at 7 per cent in order to show the potential cash flow implications for the Victorian budget if the state borrows the money to construct the EWLNA recommended projects. In presenting these calculations, the Study Team is not suggesting that 7 per cent is the most appropriate cost of funds for the projects.

If each project was undertaken separately at the time indicated in Table 24 (and excluding any government contribution or revenue from sources such as tolls), the approximate annual interest costs and annual debt repayments over an assumed 60 years would be in the order of $2.5 billion per year.

The size of this financing task underpins the following discussion on whether, and how, the EWLNA recommended projects could be funded.

Table 24 – EWLNA recommended road and rail projects – the size of the financing task

	CONSTRUCTION		
	Start	**Completion**	**Cost ($b 2007)**
*Public Transport**			
Rail Tunnel (Footscray to Domain)	2011	2016	4.5
Rail Tunnel (Domain to Caulfield)	2015	2019	2.5
Tarneit Link	2015	2019	1.5
Total Public Transport			8.5
Road Link			
Truck Action Plan	2010	2012	0.5
Inner West to the Port**	2012	2016	2.0
Eastern Freeway to CityLink and Port	2014	2019	5.5
Western Extension	2022	2025	1.5
Total Road			9.5
Combined Total			**18.0**

* Doncaster bus upgrade not shown separately due to rounding

** The alternate alignment to Westgate Freeway has a lower cost

Note: All cost estimates in this report are expressed in 2007 dollars. When the projects come to be constructed in the future, these costs will be higher to allow for inflation and any other specific increases in the cost of construction.

Source: EWLNA

10.2 State infrastructure investment and budget capacity

Around Australia, cities, states and territories face similar challenges to Victoria in finding ways to fund the infrastructure required to support population and economic growth and drive industry change.

In recent years, several federal, state and territory infrastructure plans and projects have been announced. While the following discussion focuses on Victoria and the two other eastern states to our north (NSW and Queensland), major infrastructure programs are also underway in South Australia, Western Australia and nationally.

Table 25 below summarises a recent review of state budgets and infrastructure plans, showing the current intentions of Victoria, NSW and Queensland. In addition to the expenditure plans of these states, the Commonwealth Government and the Brisbane City Council are also major funders of transport infrastructure.

Queensland and NSW have announced that their infrastructure investment programs will partly be financed through increased government borrowings, budget sector contributions and the use of PPPs.

Table 25 – Investment in infrastructure – Victoria, NSW and Queensland, 2008 to 2011

$ billion	2008	2009	2010	2011	Total
Victoria	3.9	3.9	3.9	4.0	15.7
QLD	14.0	13.0	12.0	11.0	50.0
NSW	12.5	12.4	12.4	12.2	49.5
Total					**115.2**

Source: State Budget Papers

10.2.1 Victoria

The Victorian State Budget Update, released by the Treasurer in December 2007, shows that the state of Victoria is in a sound financial position and able to meet the Government's target of an annual operating surplus of at least $100 million – with the surplus target forecast to be exceeded over the forward estimates period. The Budget Update notes:

> *"The cash generated by these higher projected operating surpluses over the forward estimates will enable the Government to continue to make significant investments in infrastructure, with only modest increases in net debt.*
>
> *The provision of an effective infrastructure base is a key driver of economic growth. It facilitates an efficient transportation network, underpins the delivery of quality services, and is crucial to attracting business investment and promoting population growth.*
>
> *Since 2000-01, the Government has invested more than $16 billion in the delivery of infrastructure, with average annual investment exceeding $2.3 billion.*
>
> *The Budget Update shows estimated net infrastructure investment of $3.9 billion in 2007-08. Net infrastructure commitments over the forward estimates period, from 2008-09 to 2010-11, are currently expected to average $3.9 billion per annum …"*[2]

With $10 billion to be invested over 10 years, the 2006 transport plan *Meeting Our Transport Challenges* represented an investment program beyond the usual four-year forward estimates period. The EWLNA has provided an opportunity to look further over the horizon, beyond the budget cycle and beyond 10-year infrastructure plans.

The look over the horizon shows that a step-change is needed in the capacity of Melbourne's transport infrastructure. What is not evident is a matching step-change in the revenue side of the Victorian budget. Notwithstanding the healthy state of the budget and the forecast surpluses, the likely reality is that simply funding the status quo will continue to present a significant challenge for the state Treasury.

The Study Team did not identify anything to suggest that, in the ordinary course of events, there would be a profound shift in the financial capacity of the state that would allow funding of significant changes in infrastructure capacity. It is interesting to note that the New South Wales Government has recently faced a similar question in looking to make a significant investment in Sydney's road and rail network. The solution put forward in NSW (not yet confirmed) is to privatise part of the state's energy sector and use the proceeds to fund transport infrastructure. That option is not available to Victoria.

It is important to understand that the approach of the Study Team was to identify Melbourne's future transport needs without constraining the identification of options based on the availability (or otherwise) of funding. This approach also reflects the concerns raised in a number of submissions to the EWLNA about Victoria's history of under investment in public transport as a result of the large costs of such investment and few corresponding revenue sources.

2. State of Victoria (2007), *2007-08 Budget Update*, available at www.budget.vic.gov.au

10.2.2 Queensland and NSW

As a very large state, Queensland has a diverse range of infrastructure spending needs. Of relevance to the EWLNA is the spending in south east Queensland and Brisbane.

In June 2005, the Queensland Government released the South East Queensland Infrastructure Plan and Program (SEQIPP), setting out a 20 year major infrastructure development program from 2006 to 2026. The May 2007 update of the SEQIPP identified $82 billion of infrastructure spending to 2026. The more immediate pipeline of activity over 2007–2015 is set out in Figure 109.

In the roads sector, the Queensland Government and Brisbane City Council have adopted a deliberate strategy of presenting a pipeline of projects to the market to maximise competition. This strategy has resulted in:

- the $3 billion North-South Bypass Tunnel attracting three strong consortia;
- the $4 billion Airport Link / Northern Busway project attracting four strong consortia; and
- significant market interest in the next major project: the $2 billion Northern Link tunnel project.

In NSW, the State Infrastructure Strategy (SIS) was released in May 2006. Spending over the 10 year period of the SIS is expected to be more than $110 billion, with an average of more than $10 billion per year. Likely transport projects include improvements to bus, rail and ferry services, and road projects that include connections between motorways and a major extension of the M4 to the city.

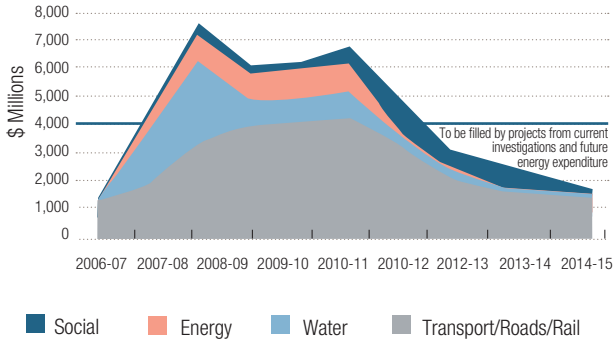
10.2.3 Major transport projects

Alongside the various state infrastructure plans, significant activity in the transport sector is likely to impact upon transport construction demand over the next few years. Given the specialist expertise and equipment that may be required as part of a road or rail tunnel project, planning and capacity issues are an important consideration in the structuring and sequencing of any potential project(s) arising from the EWLNA.

As Figure 110 shows, there is currently unprecedented competition for bidding and delivery resources for upcoming major transport projects in Australia – with most of these projects exceeding $2 billion in construction works.

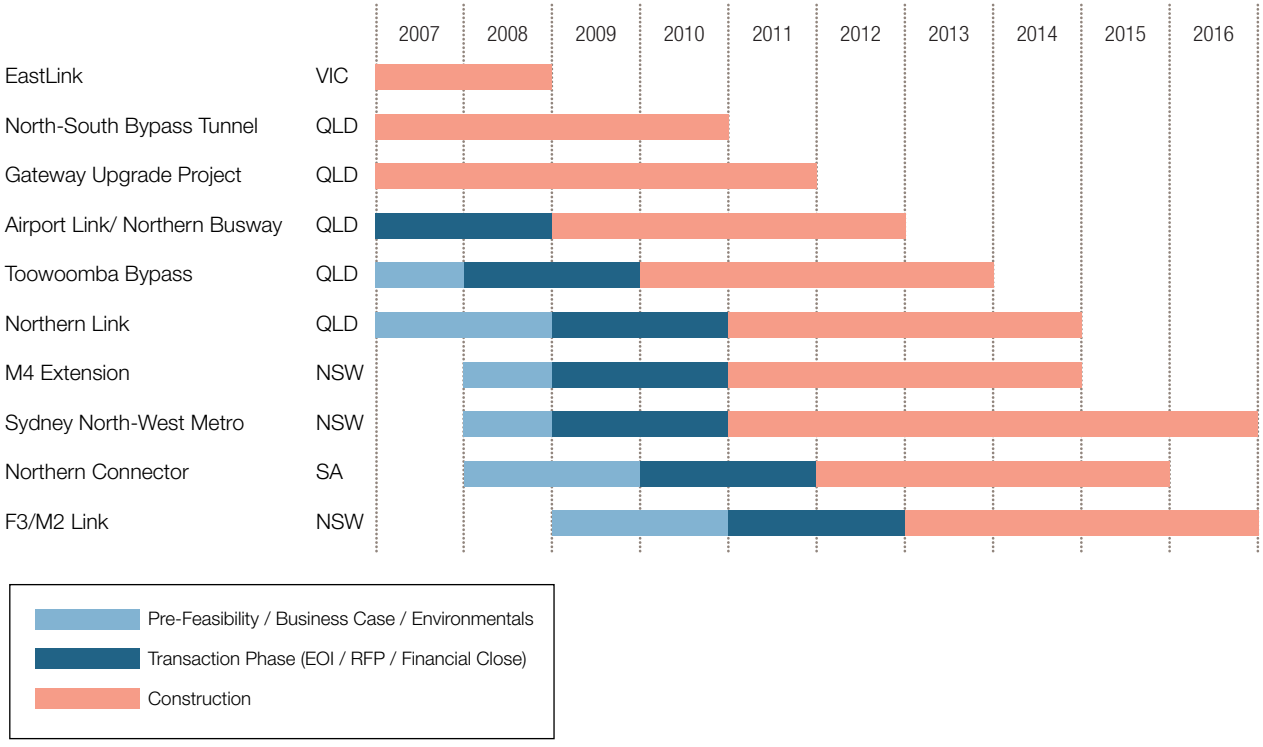
An indicative timeline for delivery of projects recommended by the EWLNA is included in Chapter 9.13. Based on that proposed timeline, there would be high levels of activity in 2009-10 and 2011-12. Any overlap with the projects listed in Figure 110 would need to be carefully managed to ensure that peak activity periods do not overlap.

Figure 109 – SEQ Infrastructure Plan activity 2007 to 2015



Source: SEQIP 2007 - 2026

Figure 110 – Market activity in major Australian transport projects, calendar years



Source: EWLNA (Ernst & Young)

10.3 Public funding capacity – revenue options

Irrespective of the type of finance used to fund construction, there is a cost of finance that must be met: interest must be paid on debt, debt must be repaid and any equity or similar investment must pay a suitable return. The Study Team identified a wide range of potential revenue sources that could be used to meet the costs of finance. Some of these options (such as tolls) are relevant whether the project is financed and delivered by the public or private sector; other options (such as municipal levies) are suitable only to government financing.

In its submission to the EWLNA, the Metropolitan Transport Forum (MTF) expressed the view that:

> *"Funding of all transport projects should be based on the triple bottom line, with social and environmental aspects being given the same regard as economics. To date this has not happened in Melburne, so it will present both a challenge and an opportunity to the Government."*[3]

The EWLNA has taken a triple bottom line approach to its assessment and adopted a multimodal approach in its consideration of transport options. The question of funding is difficult for all modes of transport and the Study Team has considered a range of options to assist in this regard. The MTF submission also notes that:

> *"... public transport improvements, for example, can benefit a much wider group of people than users of the system. Under these circumstances, it is reasonable to argue that the source of funding should also be spread beyond the system users."*[4]

In framing options for inclusion in its report, the Study Team sought to identify the link between those who benefit from a transport initiative and those who should pay for it.

The Study Team has outlined a potential 'menu' of revenue options that could be considered to partially offset government budgetary funding required for the EWLNA recommended projects or to service the debt or other finance that would be used to fund construction. These options can be grouped broadly under five categories (based on the principle that those who benefit from a project should contribute to its cost):

- *Direct charges to project users* – Direct charges are applied to consumers that actually use and benefit from the project. Charging tolls on road infrastructure is a common example of a direct charge.
- *Direct charges to network users* – Network users benefit from the project indirectly. For example, rail and other public transport users may benefit from more frequent or less crowded services with fewer delays if inner city heavy rail capacity is expanded. A special ticket levy is an example of a direct charge to network users.
- *Special levies on private parties* – This option seeks to capture a portion of the value created by a project from private parties who benefit from increased property values. A special property charges (such as an increase in rates) is an example of such a levy.
- *Commercial opportunities* – Revenue raised from opportunities for commercial development as part of any project.
- *Other government revenue options* – This option seeks to identify the value for the state created by the range of projects. This could include recognising the state's share of stamp duty and land tax as a result of increased property values or continuing to toll existing toll road infrastructure after the expiry of existing concessions and subsequent handback to the state.

10.3.1 Direct project user charges

Rail pricing

This option would involve charging a specific levy on users of either the new rail tunnel recommended by the EWLNA or users of the proposed new stations.

Charging a significant premium for rail travel to an airport station is not uncommon internationally. An Australian example of applying additional charges for using stations on a new rail line is Sydney's Airport Rail Link. The NSW Government entered into a PPP for the development of a new line to Sydney Airport in advance of the Sydney Olympics. The Government funded construction of the railway tunnels and the private sector constructed and operated the four rail stations. The private sector operator of the four stations (two of which are at Sydney Airport) charges a levy for use of the stations over and above the normal CityRail ticket price. The 'Station Access Fee' is currently $1.80 or $2.20 for the non-airport stations and $10.40 or $10.80 for the airport stations (for a single journey). Since its opening in May 2000, the line has suffered from disappointing patronage. For a number of reasons, including low patronage, the PPP company operating the line was placed in receivership in 2000. The company has continued to operate in receivership since 2000 and a sale process took place in 2006. The NSW Government declined requests to buy back the stations.

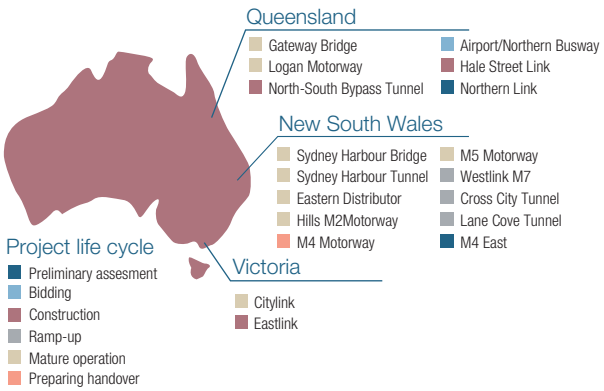
Another domestic example is the Brisbane Airtrain, which charges $13 for a single adult journey to/from the Brisbane CBD. Initial patronage on this facility was also well below expectations, with the PPP company involved narrowly avoiding going into voluntary administration in 2003. Recently, patronage has grown significantly.

3. Metropolitan Transport Forum submission to the EWLNA (2007), p.6
4. Ibid, p.4

In Melbourne, the current public transport ticketing system uses a multi-modal zone network ticketing charge rather than a charge per trip or a charge for using a particular station or piece of infrastructure. Directly charging users of the new rail infrastructure would be inconsistent with the current pricing model and – given the close proximity of city stations, a levy of sufficient size to make a meaningful contribution to the funding task might act as a disincentive to using the new stations.

In addition, as many users of the metropolitan rail and public transport network would benefit from the increased capacity generated by the rail tunnel in terms of more frequent services and fewer delays, a direct user charge would not necessarily result in those that benefit most from the infrastructure making the greatest contribution to its construction.

Figure 111 – Australian toll roads



Source: EWLNA, Ernst & Young

Road pricing / tolling

With very few exceptions, nearly all major urban road projects in Australia in the past 10 to 15 years have included user-pays toll charges. In recent years, all major new road projects have been financed and delivered in this way, with a combined infrastructure investment to date in excess of $12 billion. While people would prefer not to pay tolls, there is now broad acceptance by road users of tolling to obtain the use of new road infrastructure within a reasonable timeframe, and where significant travel time savings are created. Figure 111 shows the current status of toll roads in Australia.

Recent experience of some large scale toll road developments shows that toll revenue is not always sufficient to produce a viable private project without some government contribution. This is especially true of projects with a significant tunnel component. For example, the Brisbane City Council will contribute more than $400 million to the city's North South Bypass Tunnel (NSBT) and the Queensland Government will contribute up to $1 billion to the Airport Link project. In the 1990s, the Victorian Government made a contribution to the construction cost of CityLink.

Considering the future likely traffic volumes in Melbourne's east-west corridor and the construction cost estimates set out earlier in this chapter, it is unlikely that tolls alone would be sufficient to fund construction of the entire road project. Accordingly, the Study Team considers that it is appropriate to consider the project in its component parts and notes that it is likely that the level of required government contribution could vary widely across the different parts. For example, the western section of the project has very different financial characteristics to the eastern section (from the Eastern Freeway to CityLink), with the relationship of the construction cost and possible toll revenue likely to be more favourable in the east (resulting in any government contribution being lower).

By their nature, projects with a large tunnelling component are more expensive per kilometre than projects such as EastLink or CityLink, which have a large surface component.

At a practical level, the road connection will serve a number of different markets and is effectively a combination of three smaller projects:

- A connection between the Port of Melbourne and the West Gate Freeway or the western side of Footscray
- A connection between the Eastern Freeway, CityLink and the Port of Melbourne
- An upgrade of the West Gate Freeway to the Western Ring Road or a connection between the western side of Footscray and the Western Ring Road at Deer Park.

As noted earlier, each section would have different traffic profiles and demand, which may make some sections more suitable for tolls than others.

It is difficult to envisage such a large scale project – or indeed, any other comparable road project in Australia – proceeding without tolls being charged to users. Recent experience in Australia has shown that the private sector takes a more optimistic view of tolled traffic than the more conservative estimates of government; however, as seen in Sydney's Cross City Tunnel, there are significant financial consequences where the revenue forecasts are not met. In the case of the Cross City Tunnel, these consequences were all borne by the private sector. The possible consequences for industry of the Cross City Tunnel experience are considered further below.

As described earlier in this report, Melbourne's significant growth in traffic will result in increasing congestion at peak times, spreading over larger periods of the day. In these circumstances, a future toll road in inner Melbourne could reasonably include an element of time-of-day pricing (with higher tolls in peak hours) to maintain free flowing traffic along the new road. (It is also conceivable that toll charges could differentiate between the different emission categories of vehicles: schemes of this type are already in operation in other cities).

10.3.2 Direct charges to network users

Several alternative revenue sources in this category were considered by the Study Team and are set out below. Many of these revenue sources involve the consideration of broader policy options and – in some cases – could involve redistribution or adjustment to existing charges where government policy considerations may have changed.

Some of these alternatives are beneficial not only from a revenue generating perspective, but also for their contribution to achieving environmental objectives by including more specific pricing of road use and encouraging some modal shift to public transport options.

Direct charges to public transport network users

Commuters across the entire rail network and, to a lesser extent, the inner city public transport network are likely to benefit from the expansion of inner city heavy rail infrastructure. Benefits may include reduced crowding and travel time, fewer delays, new connections and more frequent services.

Melbourne's public transport ticketing system could be adjusted to include a special levy on tickets as a source of revenue to reduce the funding gap for rail infrastructure construction. Options include levying network users who enter the Zone 1 inner suburban network or the entire Melbourne metropolitan network (incorporating Zone 1 and Zone 2). Consideration would also need to be given to whether passengers on V/Line services that access the inner Melbourne stations should be included in a levy.

As noted earlier, there is a precedent for such an option, with a ticket levy forming part of the suite of funding mechanisms used to build the Melbourne Underground Rail Loop in the 1970s. The Study Team considers a ticket levy to be a logical and practical revenue option that warrants further examination by the Victorian Government.

Direct charges to road network users

Route or corridor charges

The construction of the proposed road project has the potential to ease traffic congestion across the east-west corridor, with benefits extending much further afield. For example, motorists who use the existing inner city network, but do not use the new road, would benefit from reduced congestion on existing road networks. In these circumstances, it can be argued that motorists receiving the benefit of reduced congestion caused by the construction of the new road could be charged to reduce the funding gap for the road. However, the Study Team notes that this is contrary to current Victorian Government policy. In addition, such a network-wide charge has never been applied in Australia.

A related question in this area that is worthy of consideration by the Victorian Government is whether the practice of tolling new additions to the road network while older pieces of the network remain toll free is sustainable. Within a relatively small geographic area in Melbourne, there are free east-west routes, such as the West Gate Freeway and the Eastern Freeway, alongside tolled routes such as CityLink and (potentially) a new east-west road connection. This can result in an imbalance of traffic between two parallel routes, which is undesirable from the perspective of overall road network efficiency.

Study Team Findings

Greater flexibility in tolling policy may be appropriate for large scale road projects in the future. If the Victorian Government proceeds to the next stage of development for an east-west road connection, it should review its current tolling policy to ensure that opportunities to improve urban amenity are captured, that priority routes for public transport can be created and that an efficient balance of use on the road network is achieved.

Cordon congestion charge

As noted earlier, a number of the world's most congested cities have considered and implemented a cordon congestion charge to provide a disincentive for road users to enter a prescribed inner city area. A cordon congestion charge could be applied to vehicles entering a specified central Melbourne area to generate revenue for new transport infrastructure.[5]

A specific congestion related charge does not necessarily have to generate new revenue to fund new infrastructure – an alternative is to make such a charge revenue neutral by reducing other taxes or charges, such as fuel excise. This is a complicated exercise in Australia, with fuel excise taxes being the responsibility of the Commonwealth and levied nationally.

Fuel levy

This option involves applying an additional fuel levy to the cost of petrol for retail consumers. A fuel levy would encourage a shift towards public transport and align with environmental concerns about road traffic. However, the imposition of a fuel levy at the state level is not possible as the High Court has ruled that Australia's states are unable to make such charges. The Study Team is unaware of any willingness by the current Commonwealth Government to review this position.[6]

5. Road pricing in the Melbourne context is discussed in greater detail in Chapter 4.
6. A recent study in Auckland into congestion and road pricing concluded that a local fuel levy was the most appropriate response for their particular circumstances.

Registration levy

An annual levy on all registered vehicles in the Melbourne metropolitan area is a revenue option that could be relatively straightforward to implement. A registration levy is also consistent with environmental objectives, potentially encouraging some modal shift from road to public transport by providing financial disincentives to road use and vehicle purchase. However, the converse could also apply: by increasing the fixed cost of vehicle ownership, car owners may feel more inclined to use their vehicles to get 'value for money'. In addition, initiatives that increase the fixed cost of car ownership may place a disproportionate burden on people without access to adequate public transport.

The rationale behind the existing annual registration fee is to charge road network users for the development and maintenance of road infrastructure. A proposed registration levy for major new infrastructure aligns with this rationale. Given the large number of – and likely growth in – vehicles registered in Melbourne, a registration levy could make a significant contribution to the funding task.

CBD parking levy

Private car parks in the Melbourne CBD are currently levied $800 per car space per year. An additional levy would be passed on to car park users through higher prices, providing a further disincentive to road users to drive in the central city. This revenue option may reduce CBD congestion and provide a further revenue source.

However, such a levy would not be a significant source of revenue in the overall funding task for an east-west road or rail transport link.

Road freight charge

Congestion on suburban roads surrounding the Port of Melbourne is a key focus for the EWLNA. A charge on road freight could be considered in the broad spectrum of revenue options (either a charge on the road network generally or a local initiative such as one based on trucks leaving the port). However, the Study Team believes it is difficult to justify distinguishing between different road users, even in the areas close to the port.

Alternatively, a toll charged on trucks entering residential streets around the port could be considered as a revenue option. While this would help to address neighbourhood amenity issues by discouraging trucks from moving through these areas, it would be inconsistent with the Truck Action Plan recommended by the EWLNA (which combines truck bans with alternative bypass routes).

10.3.3 Special levies on property owners

This revenue option seeks to levy property owners that benefit from increased values as a result of major infrastructure projects – and capture a portion of that value.

City of Melbourne rates levy

An improved public transport network in the inner city has the potential to increase property prices and deliver substantial benefits to businesses and residents located in the City of Melbourne. If this option is pursued, it would be appropriate to consider residential and non-residential properties separately, recognising that non-residential land owners are likely to benefit from improved access to the city for their tenants, employees and customers. The Study Team considers a rate levy to be a logical and practical revenue option that warrants further consideration by government.

Broader municipal levy

Most municipalities in the Melbourne metropolitan area enjoy the benefits of a comprehensive public transport system. By making further investment in public transport services, residents in these municipalities are likely to benefit from improved services and higher property values. The levy could be applied to the municipalities' existing rates base. It may encourage road users to shift to public transport as a result of improved services and because they would already be partially paying for public transport through the levy. Determining which municipalities are included or excluded from the levy may prove difficult. The Study Team considers a rate levy to be a logical and practical revenue option that warrants further consideration by government.

Levy on new developments in the western suburbs

The evidence is very clear that improved transport infrastructure has the effect of increasing property prices for existing land owners. Much of the current rapid growth in residential and industrial development in Melbourne's west has been driven by the availability of relatively cheap land in good proximity to the centre of Melbourne; however, transport infrastructure in the western suburbs remains underdeveloped. In theory, the Victorian Government could capture some of the benefit of rising land values generated by the proposed EWLNA projects to help pay for the infrastructure. In practice, such a levy would be challenging to implement. Determining the value of the increase in land prices attributable to the new transport infrastructure would be problematic; selecting the area to levy would also be complicated. A levy on new housing and industrial estates may be a more practical option.

Developer contributions are already in use in Victoria – and are growing in size and scope. At present, they are used mainly for the provision of local infrastructure within the new residential area; in only a few cases is there a meaningful contribution to the broader transport network. However, while these contributions could be increased, there comes a point where these charges may make land less affordable, driving residents and businesses even further afield.

Levy on new developments in the inner city

Similar to a levy on new developments in the western suburbs, a levy on new developments in the inner city is likely to have benefits and drawbacks. As noted earlier, inner city property owners are likely to benefit from improved inner city rail infrastructure and resulting increases in property prices. In part, this gain can be captured through general property levies, not just levies on new developments.

10.3.4 Commercial opportunities

Commercial opportunities can create value for large scale infrastructure projects through associated property and retail developments. One recent Melbourne-based example of a rail-based commercial opportunity is the retail development in the new Southern Cross Station precinct. Similar – and significant – commercial opportunities could be available at the newly constructed Melbourne Metro rail stations.

10.3.5 Other government revenue options

Tolling of existing toll roads after handback to government

Melbourne's two toll roads, CityLink and EastLink, are structured under concession arrangements. When the concessions expire, the toll roads revert back to the Victorian Government at no cost. One potentially attractive revenue option would be to continue to toll these roads after handback and use the revenue to service the cost of financing the EWLNA recommended projects. The CityLink concession is due to expire on 30 June 2034, while the EastLink concession will expire on 30 September 2043. There are circumstances under these concession arrangements where these expiry dates could change; however, at this time, the dates remain current.

Study Team Findings

Many revenue options are available to boost public funding capacity for large scale infrastructure projects. If the Victorian Government decides to proceed with all or part of the recommended projects, all revenue options should be fully canvassed through detailed business case analysis and in consultation with the Victorian community and the financial and construction industries.

In relation to the recommended rail tunnel, the Study Team's view is that arrangements similar to the plan used to fund the City Loop – including a ticketing levy and a municipal levy in addition to state contributions – offer the best prospects for funding the project in a fair, prudent and efficient way.

10.4 Public funding capacity – Commonwealth

The newly elected Commonwealth Government has made infrastructure development a high priority and has established Infrastructure Australia to better co-ordinate the delivery of national infrastructure. However, the Commonwealth has not signalled any significant change in the nature of funding for transport infrastructure, with the AusLink program remaining the means by which the Commonwealth contributes to the development of the national transport network.

At present, urban congestion is receiving considerable attention and the Commonwealth Government has indicated its willingness to work with the states and territories in finding solutions to the problem. While there is general recognition that improving public transport is critical to tackling urban congestion, the Commonwealth has not agreed to contribute funding to urban public transport improvements.

As part of its 2007-08 budget, the previous Commonwealth Government announced that it would invest an additional $22.3 billion in Australia's land transport system from 2009-10 to 2013-14. This new funding will be available under AusLink 2, the second stage of the national AusLink program (see Table 26).

In respect of road transport options, the AusLink process requires consideration and assessment of a privately financed model (which is likely to include user tolling) for any project in excess of $500 million. In addition, for any project where private funding is sought in parallel with AusLink funding, there are detailed requirements in respect of the procurement approach and the timing of AusLink payments.

AusLink only covers 50 per cent of the cost of approved metropolitan projects and state or territory governments are responsible for any cost overruns.

It is reasonable to assume that substantial funding would be available from AusLink for those sections of the road link servicing the West Gate corridor, the major western industrial areas (such as Altona and Laverton) and the Port of Melbourne. The Study Team believes that a compelling case can be made that other sections of the link also have statewide and national implications that extend beyond Melbourne's metropolitan area.

In general, the AusLink evaluation process is reasonably consistent with current Victorian Government approaches used in assessing major transport projects. Clearly, the most efficient process is for the Victorian and Commonwealth Governments to cooperate on a joint evaluation process for any proposed EWLNA projects seeking funding from AusLink.

Table 26 – Commonwealth AusLink funding

Administered Program	AusLink 2 2009-10 to 2013-14 $ billion
AusLink Investment Program	16.8
AusLink Black Spot Program	0.3
AusLink Strategic Regional Program	0.3
AusLink Roads to Recovery Program	1.7
Total AusLink Administered	**19.1**
Untied Local Road Grants	3.1
TOTAL LAND TRANSPORT INFRASTRUCTURE FUNDING	**22.2**

Study Team Findings

Given the scale of the EWLNA recommended projects, their importance to Melbourne and Victoria and their significance for the national transport network, the Victorian Government should seek early discussions with the Commonwealth Government regarding a funding contribution from AusLink towards some or all projects, or parts of projects.

10.5 Private funding capacity

As noted earlier, the scale of the projects recommended by the EWLNA is beyond the capacity of state budgets, even allowing for a Commonwealth contribution. If the Victorian Government decides to proceed with one or more of these projects, a detailed business case analysis would be required to ascertain optimum funding arrangements, taking into account matters such as state borrowing and whether private sector participation represents value for money. The Study Team has considered the potential of the private sector to finance projects, should the government seek their involvement.

Infrastructure finance operates in a global market for both equity and debt. While there are very large sums of money available for investment in projects, there is also a large – and growing – number of projects competing to attract these funds. Generally, an infrastructure project exceeding $1 billion is considered to be of a sufficiently large scale to attract the attention of international infrastructure finance. Projects of the size described in this report would rank amongst the largest of their type and would be considered 'international projects'.

A recent study undertaken by Ernst & Young showed that, in the period 2000 to 2030, average annual global infrastructure spending will be around $160 billion on rail projects, $760 billion for road projects, $1.4 trillion for telecoms infrastructure and nearly $3 trillion on electricity and water infrastructure.[7]

The need for this scale of infrastructure is driven by a range of factors, including:

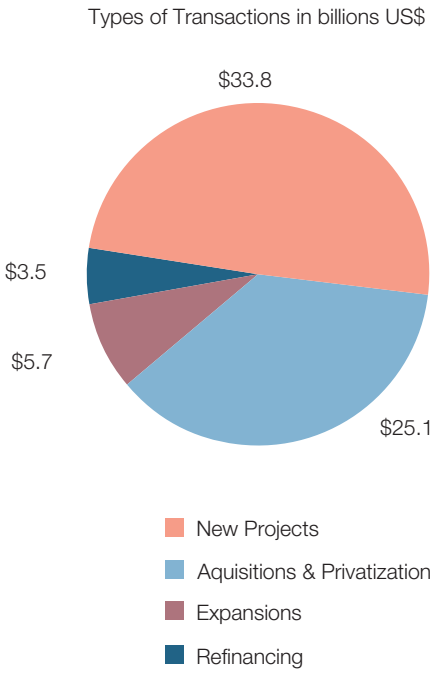
- Population growth
- Economic growth
- Increased global competition
- Insufficient or poorly planned public investment in infrastructure in the past
- Ageing and deteriorating infrastructure.

Ernst & Young has observed that:

> *"As the need to repair, replace, and modernise infrastructure continues, expenditures are reaching record levels worldwide—forcing governments to reach out to the private sector. The result has been a convergence of public need and private capital."*[8]

Globally, governments are increasingly accessing the private investment market to fund infrastructure projects – a trend that is likely to continue with the costs of development increasing as resources (land, labour and materials) become more scarce and/or more expensive due to demand and capacity constraints. The global scale of private sector involvement in infrastructure projects is indicated by Figure 112, which shows private sector transactions in transport over the two years from 2005 to 2007.

Figure 112 – Transportation infrastructure deals involving PPPs – January 2005 to February 2007



Source: Ernst & Young (2008)

The recent turmoil in international financial markets has had an impact on finance for some transactions. While in the short term there could be an increase in the cost of project finance, it is unlikely that banks or investors will be unwilling to participate in quality infrastructure projects in the future.

Victoria has been an active user of private funding for infrastructure, with Public Private Partnerships (PPPs) accounting for around 10 per cent of the state's expenditure on public infrastructure in recent years. Since 2000, 18 *Partnerships Victoria* projects have been contracted, worth around $5.5 billion of capital investment. A number of projects are currently being prepared for delivery as *Partnerships Victoria* projects, including the $3.1 billion desalination plant at Wonthaggi and a package of 11 schools in Melbourne's growth suburbs.

7. Ernst & Young (2007), *Investing in Global Infrastructure 2007: An Emerging Asset Class – Global Overview*, available for download at www.ey.com
8. See: www.ey.com/global/content.nsf/International/Real_Estate_Library_Global_Infrastructure_Emerging_Asset

There are strong indications of the benefits of the *Partnerships Victoria* approach. An independent review of *Partnerships Victoria* in 2004 found that each of the eight projects reviewed delivered equal or better value than public sector provision. Overall, the weighted average saving was 9 per cent against the public sector comparator (PSC), using the then prevailing discount rate.[9] A recent study by the Allen Consulting Group and the University of Melbourne for Infrastructure Partnerships Australia found that PPPs provide superior performance in both cost and time dimensions and that the PPP advantages increase (in absolute terms) with the size and complexity of projects.[10]

While Australia has a well developed and extremely capable market for privately financing infrastructure and developing Public Private Partnerships, there are real limits on the size of transactions. These limits are influenced by the specific characteristics of the project itself (in particular, the allocation of risk) and general market factors (such as the state of debt and equity markets, and the status of other competing projects). Notwithstanding the industry's successful completion of larger projects in recent years, the ability of construction contractors to financially guarantee delivery of larger and larger projects remains a practical constraint on project size.

The extent of allocation of risk to the private sector is relevant as it influences the pool of potential financial partners and the amount of finance available in the market. For example, in relation to road and rail projects, there is a difference in willingness to finance a greenfield toll road project at one end of the spectrum compared to a road or rail project where payment is made for availability of the facility and investors are not exposed to traffic risk.

In its consultation with participants in the Australian infrastructure finance industry, the Study Team found reasonable consensus that a practical upper limit of between $3 billion and $5 billion existed for an individual greenfield toll road. From a financing perspective, a project that is less exposed to unproven patronage risk or that has payments based on the availability of the facility could attract potentially higher levels of finance.

The market for financing toll roads in Australia is well developed, with very large projects being successfully financed through highly competitive bid processes. The toll road market can respond to projects that stand alone financially (such as EastLink) or it can respond to projects where partial government contribution is required when the forecast toll and other revenue is insufficient to fund the capital and operating costs of the project (such as the North South Bypass Tunnel, where the Brisbane City Council is contributing approximately $400 million to the cost of construction).

While industry feedback suggests that the road connection recommended by the EWLNA would be too large to be undertaken as one project, its component parts also have different characteristics – and these component parts are likely to exhibit different characteristics in the future. For example, the section between the Eastern Freeway and the Tullamarine Freeway has a reasonably well understood and mature traffic pattern when compared to the western end of the connection, which would service an area that is growing and changing extremely rapidly. Different characteristics apply to the proposed connections to and from the Port of Melbourne, which are strongly focused on commercial vehicles and where traffic is likely to grow strongly in line with the growth of the port.

Recognising the practical constraints of project size, the different characteristics and different timing of the needs of the area served by the road link, the Study Team's view is that the project should be broken down into three stages. The Study Team is confident that the market has the capacity to deliver the project in these stages. Integration between the stages would be critical and it would be desirable to ensure consistency of operation across the stages.

Using private sector finance to fund construction of a rail tunnel is a very different matter to financing a road project. The market for such financing is not well developed and, as noted earlier, the few examples that have occurred in Australia (the Sydney and Brisbane airport rail links) have not been very successful. In addition, the specific nature of the facility itself needs to be considered. Other proposals in Sydney to develop privately financed rail lines have encountered significant issues with rail network integration. A proposal to privately develop and operate a rail extension to Bondi failed to proceed, in part because of the difficulty in balancing the service needs of the proposal with the practical constraints of operating in a network context. By comparison, a recent proposal to develop a privately financed and operated rail line to the west of Sydney presumes that the railway will be completely independent of the rest of the network. In this way, the operator is in charge of its own performance.

The proposed rail tunnel recommended by the EWLNA would be a fully integrated part of the suburban rail network and train services would be normal suburban services. One option would be to privately finance and deliver the tunnel and/or station infrastructure and have private operators maintain the infrastructure in return for a payment based on the service availability of the facilities. However, this would need to recognise the current arrangements for operating the suburban rail network. This is similar to arrangements in PPPs such as Southern Cross Station and some hospitals and prisons, where the core services are performed by others.

The Study Team considers that while the private sector is capable of financing the rail tunnel, the existing operational and contractual framework of the Melbourne rail network would require careful consideration and might limit the flexibility available for private financing of the project.

9. Fitzgerald, Peter (2004), Review of Partnerships Victoria Provided Infrastructure, Report to the Treasurer of Victoria, Melbourne
10. The Allen Consulting Group and the University of Melbourne for Infrastructure Partnerships Australia (2007), Performance of PPPs and traditional procurement in Australia, Final Report, 30 November 2007, p.1

The Cross City Tunnel – has it affected private sector interest in toll roads?

Sydney's Cross City Tunnel (CCT) is the only one of 11 PPP toll road contracts signed in Australia to go into receivership. In 2007, CCT was sold to a Leighton/ABN Amro-led consortium for $700 million, which enabled the debt financiers to be fully repaid and equity to recover a small amount of their investment.

The Study Team believes that it is important to consider whether the CCT situation has had a material impact on potential private sector interest in toll road projects in Australia.

The main problems experienced by the CCT can be summarised as:

- *Inaccurate projection of traffic volume* – Cross City Motorway (the private sector entity established to build, own, finance and operate the CCT) grossly overestimated the traffic that would use the project. Publicly available data now shows that actual traffic is around 30 to 40 per cent of forecast levels.
- *Management of changes to surface roads* – The concept of 'traffic funnelling' emerged, where it was alleged that proposed surface works at various sites, such as William Street, were designed (and contractually committed by the NSW Government) to encourage traffic into the CCT. Importantly, these proposed changes to the road network were well documented in the environmental impact statement undertaken before CCT reached financial close and were seen at that time as being vital to improving local amenity.
- *The 'up-front payment versus toll' debate* – The tender process involved companies bidding an up-front payment to the NSW Government, based on a toll level set by the Roads and Traffic Authority. The NSW Government was criticised for adopting this structure, with many observers suggesting that structuring a tender process that focussed on an outcome of the lowest possible toll would have resulted in a more appropriate outcome.
- *Limited contract disclosure* – While the NSW Government has traditionally published contract summaries, it was heavily criticised for not releasing full details of the contracts, leading to a change of policy in this regard.

Despite these problems, it is important to focus on the following facts:

- Private sector investors in CCT have publicly stated that they have written down 100 per cent of their equity investment. Total equity in CCT exceeded $400 million.
- NSW taxpayers have incurred no cost for the financial failure of the tunnel company. In other words, the risk allocation that is central to the PPP concept has held successfully and revenue risk has been fully borne by the private sector. However, the NSW Government did incur costs to reverse the surface network changes and paid compensation to the tunnel company for failing to meet its contractual obligations (in total, this expenditure was less than the initial payment to the government).
- CCT has remained open for traffic and continued to operate within the contract requirements.
- To date, private investors, contractors and financiers have not been discouraged by the CCT experience. They continue to bid on opportunities: the North South Bypass Tunnel (NSBT) yielded competitive bids; the Airport Link / Northern Busway (AL/NB) project yielded four strong consortia; the Lane Cove Tunnel has traded its equity; a number of toll road PPPs in NSW and Victoria have refinanced on improved terms; and – most importantly – the CCT sale process yielded a strong list of private sector bidders. All of this has occurred in the 'post CCT' environment.
- Improvements in contract disclosure, the procurement process and the commercial terms of the PPP contract have been adopted as standard on more recent procurements, such as NSBT and EastLink.
- A number of important recommendations have been made by the various NSW Government inquiries into CCT.[11] These recommendations have been incorporated into the procurement processes for NSBT and AL/NB. Examples include no network restrictions as part of the PPP contract and full contract disclosure.

In summary, the lessons learned from CCT (already reflected in the approaches taken by the NSBT, EastLink and Airport Link projects) should be considered in the event the EWLNA projects progress to procurement. However, the empirical evidence is that the CCT experience has not affected private sector appetite in Australia for toll road projects.

11. Parliament of New South Wales (May 2006), *The Cross City Tunnel and Public Private Partnerships*, Second Report – May 2006 and Department of Premier and Cabinet (December 2005), *Review of Future Provision of Motorways in NSW*, Infrastructure Implementation Group, State of NSW, Sydney

10.6 Capacity of the construction industry to deliver projects

Australia is an active participant in the sustained boom in infrastructure construction in our region. This raises a question about the capacity of the construction and finance sectors to respond to a major program of new infrastructure in Melbourne, given the number of projects underway or planned elsewhere.

The Study Team has consulted widely with the major participants in the construction industry. In summary, there is broad agreement within the industry about the following key messages:

- There is no lessening of appetite within the industry to undertake major new projects.
- Notwithstanding the substantial program of works already identified nationally, there is capacity to take on additional major projects in Melbourne.
- The industry has grown significantly in the last decade in response to the demand for project delivery.
- There are some resource limitations, such as design capability, and governments should structure their project delivery schedules so that the industry can access these key resources in a managed, sequential fashion.
- The appetite for assembling the funds required to deliver major projects under public private partnership models remains very robust.

10.6.1 Background

In recent years, some observers have suggested that the number of very large infrastructure projects throughout Australia has stretched the capacity of the local construction industry. The Study Team consulted widely with a range of key parties to explore this view and to gain an understanding of the status of current projects and the resource implications for future major works in Melbourne.

There is clearly a high level of pride within the industry about the way it has developed over the last decade. Projects that would have been significant a decade ago with values of around $200 million have been replaced with projects worth more than $2 billion, and the industry had been able to gear up to the level of performance required to deliver these larger scale projects. The industry is confident that this escalation in capability can continue, despite the large number of projects being considered by state governments around the country.

The Study Team notes that when the EastLink Project was being developed, concerns were expressed about the ability of the private sector to undertake a project of such scale within the proposed four year construction period. However, three years after works commenced (the sod-turning was in late March 2005), the bulk of construction on this massive project has been completed and there is now a high level of expectation that the new freeway will be operating months ahead of the originally scheduled date.

Three examples illustrate the approach the private sector can take to respond to the demands of meeting the resource requirements for large projects in a busy delivery environment:

Pre-cast concrete elements

The EastLink Project required a huge number of pre-cast elements, including around 1,600 large beams for nearly 90 new bridges. Around 30,000 pre-cast items were needed to meet the overall project requirements, which would have put intolerable strains on the capacity of established pre-cast suppliers in Melbourne.

Thiess John Holland, the EastLink design and construction contractor, converted a disused steel fabrication yard at Morwell to a new pre-casting facility and, in a matter of a few months, had developed the largest pre-cast yard in the country. While such an undertaking required key personnel with appropriate industry skills, most of the workforce at the yard was engaged locally and trained to adapt previous skills to those required for a pre-casting operation. This initiative ensured that the pre-cast concrete requirements for the project were delivered on time and to a high standard, with minimal impact on the capacity of the existing industry to meet demand for other projects.

Tunnelling

At the time of bidding for EastLink, an extensive tunnelling program was underway in Sydney and projects were under development in Brisbane. Concerns were expressed that it would be difficult to assemble the appropriate tunnelling staff in Melbourne and that this would severely impact on the capacity of Thiess John Holland to deliver the EastLink tunnels within the project timeframe. As with the pre-cast yard, key people were brought to the project with tunnelling experience, but most tunnellers were engaged locally and had little or no tunnelling experience. Through careful selection and training, a new workforce of tunnellers was developed. In a relatively short time, this workforce was matching the performance of their experienced colleagues interstate.

Equipment

Access to key items of equipment is a significant challenge for construction companies engaged in major infrastructure projects. With so many bridges requiring beam lifts, access to mobile cranes could have proved frustrating if contractors had relied solely on the availability of those cranes already serving Melbourne. Thiess John Holland sourced and imported a 500 tonne capacity mobile crane, which was able to meet the project's crane requirements, limiting reliance on the availability of existing cranes.

10.6.2 Major works

Construction industry representatives readily acknowledge the scale and range of major works being undertaken in Australia and expressed their enthusiasm for this healthy state of affairs to the Study Team. Projects drawing on the resources of the industry extend beyond road and rail projects in Melbourne, Sydney and Brisbane and include:

- Victoria's planned desalination plant at Wonthaggi (as well as an expansion in desalination capability interstate)
- Other major water projects, which are being developed at a rate three to four times higher than usual
- Tasmania's new pulp mill, a project worth in excess of $2 billion
- Projects emerging in New Zealand where a $3 billion three year infrastructure program has been announced
- The Olympic Dam project in South Australia, a $5 billion to $8 billion project that will also require the construction of a new town and airport
- Several major projects underway or in prospect in Queensland, including major rail works and the new $1.5 billion Springfield Dam
- The release of plans for a $12 billion expansion of the Sydney rail network and plans for significant extensions to the city's metropolitan freeway network
- A high number of works in the Middle East and South East Asia – for example, Leighton International is heavily committed with such works and recently moved its headquarters from Kuala Lumpur to Dubai in response to the pipeline of work occurring in the Middle East, drawing in local partners and expertise
- Melbourne's EastLink Project and the M1 upgrade, which have a combined construction cost of around $3.5 billion.

The resources boom, most evident in Western Australia, is also having an impact on the construction resources available to projects in the eastern states.

Overall, the picture is one of intense activity and the clear expectation is that this activity will continue to escalate in the future.

Study Team Findings

Governments can assist industry to make more efficient use of its resources and produce better quality, more competitive bids by providing clarity concerning the intended pipeline of future projects, in terms of the nature and timing of projects. This would also allow different jurisdictions to work together to co-ordinate bid timing, avoiding having multiple projects at critical stages before the market at the same time.

10.6.3 Resource implications

People

There are implications for human resources from such a high level of project and construction activity. All contractors struggle to find the full range of people necessary to deliver a major project and many are adopting new approaches to develop the required skills within their companies. These approaches include recruiting overseas, which has been successful in growing the workforce but comes at a cost in terms of salaries and conditions. Generally, the major companies structure themselves as national companies with a high level of mobility expected for key people. Companies feel they are getting smarter in their engagement, training and development of graduates, with more emphasis being placed on retaining staff within the company. Companies are also using overseas exchange arrangements to assist with skills development.

Although the industry feels that, with sufficiently attractive salaries, the necessary resources can be assembled, it acknowledges that some key tasks present specific skill challenges. For example, having access to the necessary design teams, especially during the bidding process, is of critical importance. A consistent message emerging from the Study Team's consultations with the construction industry was that the bidding phase of projects needs to be nationally coordinated to ensure that companies are able to access these design skills.

While large companies assemble 'A Teams' to develop their bids for major projects, there is a six month period when overlapping of bid submissions can cause some serious difficulties. The challenge is for Australian governments to recognise this particular constraint within the industry and coordinate the timing of projects coming to market to ensure that the industry can provide high quality responses.

Overall, the industry believes that it now has extensive experience in major infrastructure projects, but there needs to be a continuity of projects to develop and retain staff to meet ongoing project demands. In particular, it is important to retain field employees in order to develop future site supervisors.

Equipment

The industry considers that the availability of equipment is an issue of sufficient advance notice, rather than one of overall availability. Specialist items of equipment such as tunnel boring machines take around 18 months to build and deliver after confirmation of a contract. In addition, it is necessary to fully specify the requirements of a machine and undertake the particular design requirements for the geology of a particular project. For such critical items of plant, the earlier the project details and geotechnical investigations are completed, the better positioned is the industry to deliver the equipment in a timely fashion.

However, even for routine items of equipment such as bulldozers, graders and the like, there is now a significant delivery time, with 12 months and more becoming usual. Again, this is not a limitation to the capacity of the industry to deliver, but one of the programming matters that has to be considered in structuring the resources for a project. In general, the industry did not believe that there would be any constraints on construction equipment that would unduly influence the delivery of the EWLNA recommended projects.

Materials

Materials also require adequate lead time. For example, locally produced products (such as quarry materials) can be sourced with greater confidence than bitumen, which is supplied from overseas. Steel is becoming increasingly difficult to source on a competitive basis, especially for the higher performance materials, and the huge demand for steel and concrete products in the developing economies of China and India is having some local impact. However, as with equipment, the industry indicated that access to the necessary materials would not restrict project delivery.

Industrial relations

A strong plea was made by the industry to the Study Team to ensure that the industrial relations framework now in place in Victoria is maintained. The industry noted that the positive shift in the Victorian industrial relations climate in recent years had influenced the capacity to deliver projects in a timely and cost effective way, and that Victoria had moved from one of the 'worst' industrial relations environments to be equal with the best in Australia.

10.6.4 International construction companies

A number of overseas based construction companies have contacted the Victorian Government expressing strong interest in participating in future large scale construction projects.

Historically, Australia has been very well served by large and capable local construction firms, with ever growing and more complex projects being successfully delivered. The Australian companies consulted by the Study Team are fiercely proud of the way in which they have responded to the demands for major project delivery and were strongly of the view that their project management expertise was equal to the best in the world. There was little support – unsurprisingly – for the notion that international companies were needed to support the growing major project pipeline and a high level of confidence that the local industry had the capacity to meet current and future challenges. However, the industry did acknowledge that there were areas of specialist expertise that were in short supply in Australia and, as noted earlier, local firms have sought to gain expertise by sending employees overseas to gain experience.

Australian companies also felt that their local knowledge gave them an 'edge' over international players, but that even if this was not the case, they had confidence that local firms could compete successfully with overseas competitors.

On the other hand, there are some major European companies that have expressed interest in undertaking works in Australia and in establishing an ongoing presence here. The strong pipeline of projects is seen as a good long-term opportunity by these companies, and tendering options are being actively examined. Recent indicators of this interest include:

- Bouygues has established a local office in Sydney and is competing on major infrastructure projects around Australia. The company was recently awarded the Hale Street Bridge contract in Brisbane, in conjunction with local partners.
- Laing O'Rourke, through their acquisition of Barclay Mowlem, now has an Australian presence.
- The Spanish contractor Grupo ACS submitted an expression of interest for the Airport Link / Northern Busway Project in Queensland.

New entrants to the market can bring fresh competition, ideas and experience, access to a broader experience pool and the financial status of some of the world's largest construction companies. However, it will not be easy for new entrants to establish successful businesses in Australia. Familiarity with local conditions, business procedures and requirements will take time to develop, as will assembling bid teams of the calibre required to successfully compete with experienced local teams. This local knowledge advantage is recognised and is likely to result in overseas participants partnering with a local firm, at least initially. Given that large Australian construction companies such as Leighton Holdings are now undertaking significant business in other countries – and are likely to continue to do so – it is reasonable to expect that overseas companies may seek to do the same in Australia.

There is clearly some frustration that major international companies with long track records of project delivery overseas are still viewed as newcomers in Australia and are seen as higher risk without a history of successful local projects. Some people expressed the view to the Study Team that this attitude needs to change if new players are to be introduced to the Australian market.

Some aspects of Australian project delivery arrangements are seen as a problem to overseas companies. One example is traffic risk, where international companies hold the view that if a government has developed and supported a particular project as a necessary element of the city's infrastructure, it is strange for the risk of future traffic volumes (and hence revenue) to be allocated solely to the private sector party.

When the size of the looming infrastructure construction task for both the public and private sector is considered, it is apparent that there could be room for new entrants in the domestic heavy construction market.

Study Team Findings

In implementing the projects recommended by the EWLNA, procurement processes should be structured – and communicated – globally to ensure that all suitably qualified construction companies (domestic or international) have an opportunity to participate.

10.6.5 Delivering the EWLNA projects

Although there is a high demand for construction resources, the industry expressed confidence about its capacity to respond to major new projects in Melbourne. The location of a project in inner Melbourne would be a major factor in attracting key staff, with the industry noting that there is a clear preference by project personnel to be based in major cities when opportunities arise. Locating a project in the centre of a major Australian city for several years duration would be a very considerable advantage.

The industry indicated its preference for a pipeline of projects within the $3 billion to $5 billion range, rather than one 'mega-project' that would severely limit the capacity of many companies to participate. At the upper end of this range, partnering between major contractors would be required, but there is now a strong track record in Australia of projects successfully delivered by such partnerships.

Sequencing project delivery

Because the combined size of the EWLNA recommended projects is larger than other transport projects seen in the Australian market, the sequencing and staging of the road and rail portions are likely to be advantageous in terms of funding and capacity in the market.

A staged project has several benefits:

- It provides a known pipeline of projects of a size that the market has capacity and appetite to deliver.
- Having 'sub-projects' will be more attractive to the market, with discussions between the industry and the Study Team suggesting that projects beyond $5 billion would be less manageable for constructors and financiers.
- More frequent, smaller projects represents less of a barrier to entry for new market participants.
- A staged program can also allow the government to better manage any potential call on funds over a period of time, a flexibility that could be significant when considering the state's future credit rating.
- There is precedent in the market for successful projects being delivered in a staged approach – for example, the Brisbane City Council's TransApex initiative involves a program of large scale projects such as North South Bypass Tunnel ($3 billion), Airport Link ($4 billion), Hale Street Link, Northern Link and potentially an East West Link.
- Increased competition for projects. Bid costs associated with projects in excess of $5 billion can exceed $30 million, limiting the number of companies with the capacity or willingness to bid for large scale projects.

There are also some potential advantages to delivering the EWLNA recommended projects as one large project:

- Economies of scale can be generated through a project of this size.
- Delivering the project as a whole could lead to an earlier completion of the project, as there would be an agreed timeline for full delivery. Staging the sub-projects could significantly extend the timeframe to delivery.
- A single project would avoid having multiple owners/operators if a PPP was used, avoiding interface issues.
- Building the full road connection as one project would lead to full connectivity across the network, rather than delaying the benefits to users by staging the process.
- There could be a reduced escalation cost on construction. Given the current upward trend of capital construction, these savings could be substantial.

As already noted, there are limits on the capacity of the private sector to fund road or rail infrastructure projects. In addition, the specific characteristics of particular projects, such as risk allocation, have an impact on the extent of funds that may be available for a particular project. Another factor that influences the amount of finance able to be obtained is the conduct and timing of the bidding process itself.

For very large projects, where bidders are required to obtain commitments for finance as part of their bids, there could be tensions between a general desire to have more than two bidders from a competitive perspective and the ability of the market to provide finance for three or more bids.

This capacity constraint can be compounded where bidding processes for more than one large project in more than one state take place within a twelve month period. A number of market participants advised the Study Team that if there were two or more very large projects being bid at the same time in different states, they may have difficulty in securing the necessary financial commitments to participate in more than one project. Part of the reason for needing to choose between projects is the extent of the costs incurred in preparing project bids. Bid costs for large projects are now tens of millions of dollars per consortium, including significant expenditures on preliminary design and detailed drafting of legal documents. Industry stakeholders consulted by the EWLNA indicated a strong desire for governments to implement processes to reduce the size of bid costs.

These factors are among many to be considered in determining both the optimal size and stages of the EWLNA recommended projects and the timing of bid processes and delivery.

A strong pipeline of projects

The Study Team's view is that the recommended EWLNA projects present an opportunity for the Victorian Government to demonstrate a strong pipeline of projects to the market, maximising the opportunity for competition.[12] This pipeline should be combined with an active market engagement process as the projects develop. Key elements of this process are:

- Ensuring that the project is developed and presented to the market in a manner that is attractive and that includes risk allocations that the market is able to accept (seeking unrealistic risk transfer is likely to inflate cost and lead to suboptimal value for money outcomes).
- Engaging the market in an informed discussion to identify the hurdles to maximising competition. This would involve a range of market sounding and roadshow exercises to contractors, operators, and, where relevant, equity investors and financiers.
- Providing certainty to the market about the expectations of the Victorian Government and consistency of process.
- Presenting to industry a process and documentation with which industry is familiar and that builds upon projects completed to date.
- Adopting competition and probity measures to address the effect of the common ownership of a number of the key construction contractors.
- Developing and delivering a global procurement strategy that appreciates the cost and time required to develop a bid of this nature, while ensuring that Victoria has the best opportunity for gaining a value for money outcome. This may include the use of split bidding, partial reimbursement of bid costs and other strategies to maintain effective competition.

12. This pipeline would be in addition to projects already being considered by the Victorian Government, such as the Frankston Bypass and the duplication of sections of the Western Ring Road.

Government administrative arrangements – special purpose delivery body

The Study Team received strong feedback from the industry that, when delivering very large infrastructure projects, government's own arrangements need to match the calibre of those in the private sector. In most cases, the private sector was highly complimentary of the manner in which the Victorian Government does business in contracting for large scale projects. The need for high calibre government teams applies irrespective of the form of delivery being used: PPP, a more traditional D&C arrangement or an alliance style of contracting.

Procuring projects of this scale and complexity requires a high calibre government team with the skills and experience to match those of the private sector. The government structure must enable such personnel to be recruited and retained. This includes the capacity to offer appropriate and competitive remuneration and employment conditions.

Having considered these comments and looking at recent market practice in Australia, the Study Team considers that there are compelling reasons why projects of this nature should be delivered by a special purpose government body, charged with the specific responsibility and powers to implement the project.

There are a number of benefits in establishing a separate legal entity to manage large scale projects, including:

- By taking a strategic, whole-of-corridor approach, a separate entity could exploit any synergies between the different project packages.
- A separate entity has a single focus on its objectives. While the entity would have a multi-modal task (rail and road), it would have a single focus on delivering the overall project. Achieving such a focus is more difficult in departmental models of delivery because of the huge range of competing demands within departments.
- The fact that the separate entity has a single focus enables it to adopt a commercial culture with greater flexibility and speed in decision-making – attributes that are highly valued by consortia investing billions of dollars.
- Having one entity undertaking multiple procurements allows 'corporate knowledge' to be retained and efficient processes developed and refined.
- A separate entity may also have more flexibility in attracting and retaining staff. This is likely to be particularly important in respect of a complex multi-modal project such as that proposed by the EWLNA.
- A separate entity also has the advantage that the state has less direct exposure to legal and commercial risks.

The Study Team believes that these benefits clearly favour the establishment of a separate entity to deliver the projects recommended by the EWLNA. Such an entity could take a number of different forms, as set out in Table 27.

If a corridor based approach was adopted (as recommended by the EWLNA Study Team), a single delivery body would be appropriate. Alternatively, the road and rail projects could be delivered through separate bodies. This option is not recommended by the Study Team.

While each of the models listed in Table 27 have advantages and disadvantages, the Study Team considers that a statutory authority is likely to be most suitable for delivering the projects.

Implementing this model would require the enactment of special purpose legislation to establish a statutory authority with all necessary powers and functions. The legislation would need to deal with a number of issues, including:

- the transfer of assets and liabilities (if any);
- the establishment of the statutory authority as a body corporate with its own seal (that can then sue and be sued in its own name);
- whether the entity is intended to represent the Crown and therefore enjoy the privileges and immunities of the Crown;
- the functions and powers of the statutory authority;
- any powers or functions of the Minister or a Chief Executive in relation to the statutory authority;
- the funding of the statutory authority;
- the account keeping and reporting requirements imposed on the statutory authority; and
- any transitional arrangements, including contractual arrangements and transfer of staff.

The special purpose legislation could also deal with governance and accountability issues. For example, the legislation could declare the new agency to be a statutory body for the purposes of the *Audit Act 1994 (Vic)* and *Financial Management Act 1994 (Vic)*.

Table 27 – Single entity models for delivering large scale infrastructure projects

Type of Entity	Examples
Statutory office within a department	Director of Public Transport
Statutory corporation (an entity created under its own legislation)	VicRoads, Melbourne City Link Authority and SEITA (Southern and Eastern Integrated Transport Authority)
State Body established under the *State Owned Enterprises Act 1992 (Vic)*	Transport Ticketing Authority (TTA)
State Business Corporation established under the *State Owned Enterprises Act 1992 (Vic)*	Vicforests was established as a State Body and then immediately became a State Business Corporation. In NSW, the Transport Infrastructure Development Corporation (TIDC) is established under the *Transport Administration Act,* which then establishes the entity to be a State Owned Corporation under the *Statement Owned Corporations Act 1989* (NSW).
Corporation under the *Corporations Act* **where all the shares are held by, or on behalf of, the Crown in right of Victoria**	Victorian Major Events Company Limited. This is the preferred model in Queensland, where the State has recently established a range of corporations to deliver projects, including: Queensland Water Infrastructure Pty Ltd (responsible for delivering a number of water projects); Southern Regional Water Pipeline Company Pty Ltd (established to build and operate a number of pipelines to distribute water); Queensland Motorways Limited (operates toll roads); and City North Infrastructure Pty Limited (established to deliver the Airport Link and Northern Busway Projects).
Combination of different types of entities	VicTrack. In Victoria, VicTrack has a number of wholly owned subsidiaries that are incorporated under the Corporations Act. These subsidiaries have been established to own various items of rollingstock (passenger trains and trams) that are leased to public transport operators.

Other issues

Melbourne CityLink

The Study Team is aware of the provisions of the Melbourne CityLink concession deed concerning changes to the Melbourne transport network. While the state is not restricted in managing the transport network, there are provisions known as Material Adverse Effects, where in some circumstances CityLink might be compensated for the consequences of certain network changes. Conversely, there are provisions known as Compensable Enhancements where the state can share in the benefits of changes that result in increased traffic on CityLink.

The Study Team has sought to identify the best transport solutions in response to its terms of reference; it has not constrained or altered its thinking as a result of the contractual arrangements between the state and CityLink.

Public transport re-franchising

The current metropolitan rail franchise arrangements with Connex expire on 30 November 2009. From that date, following a comprehensive tender and selection process, the Victorian Government will enter into a new franchise agreement with an operator for a minimum of eight years.

Should the EWLNA recommendation for a new east-west rail tunnel be adopted, construction will take place during this new franchise period.

Study Team Findings

Because the combined size of the EWLNA recommended projects is larger than other transport projects in the Australian market, sequencing and staging the rail and road portions is likely to be most advantageous in terms of funding and capacity in the market.

The Study Team's view is that staging the projects presents an opportunity for Victoria to demonstrate a strong pipeline of projects to the market, maximising the opportunity for competition. This pipeline should be combined with an active market engagement process as the projects develop.

A single statutory authority is likely to be most suitable arrangement for delivering the projects.