

Private Financing Options for Upgrades in the M5 and F3 - M2 Corridors in Sydney

Report to the Minister for Infrastructure and Transport



National Infrastructure Coordinator

March 2012

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Summary and Recommendations

This report has been prepared by the National Infrastructure Coordinator in response to a request from the Australian Minister for Infrastructure and Transport for advice on private financing options for upgrading the M5 East motorway and the development of a new F3 - M2 link in Sydney.

The report uses Infrastructure Australia's reform and investment framework to assess a range of funding options that can support private financing of potential transport improvements in what might be termed the 'M5 and F3 - M2 corridors'. Some funding options may still impose economic costs, if those options are applied to a poorly conceived project option that is itself uneconomic. Application of the framework therefore responds to the question, "Funding options for what?"

The framework has also been used in this report in order to demonstrate the approach to infrastructure decision-making advocated by Infrastructure Australia.

Conclusions

The report's key conclusions are:

- a) Previous proposals to upgrade the M5 East and develop a F3 - M2 motorway failed to address adequately the needs of a growing city.

M5 East Corridor

- b) Of the two corridors, action is more urgently required to address problems in the M5 corridor. The most pressing and promising means of addressing freight transport needs in the corridor is a decision to proceed immediately with the development of a Moorebank intermodal terminal.
- c) Current NSW Government projections indicate container throughput at Port Botany will grow from approximately 2 million Twenty Foot Equivalent Units (TEUs) to 7.5 million TEUs by 2030-31. For port throughput to reach this level, the planning conditions for the port will need to be varied. These limit presently port throughput to 3.2 million TEUs (this figure is likely to be achieved by 2017-18).
- d) The absence of a long term plan for Port Botany and Kingsford Smith Airport (especially their supporting landside transport network) is a manifest weakness in the city's and the nation's infrastructure planning. Planning for landside transport to these key gateways is fragmented between governments and their agencies, lacks ambition, and lacks effective commitment to deliver on agreed plans. Planning for the port's and airport's future requires consultation with all stakeholders, including the freight sector and local residents.
- e) The Office of the Infrastructure Coordinator agrees with the Sydney Port Corporation's assessment that, though improvements in the M5 corridor are required to support freight movements to/from Port Botany, the previous M5 East proposal failed to provide an effective connection to/from the Port. The project could be re-scoped as a 'high value vehicles link' - i.e. open only to trucks, light commercial vehicles, buses, and, possibly cars used by several people (notionally like a T3 lane) – that is better linked to the port and airport (probably near Foreshore Road).
- f) Handling Sydney's container freight in a sustainable manner will also require a substantial increase in the proportion of containers moved by rail. Notwithstanding recent investment, rail will not be an attractive option until the Moorebank and Enfield inter-modal terminals are developed, until terminal operations at Port Botany are improved and other commercial issues in the rail sector are addressed.
- g) Development of an intermodal terminal at Moorebank is strongly supported by both Infrastructure Australia and Infrastructure NSW and should proceed as soon as possible. The chairs of the two bodies jointly convened a 'summit' in March 2012 to facilitate this outcome.

- h) The NSW Government's acknowledgement in its November 2011 submission to Infrastructure Australia that a *Port Botany and Sydney Airport Transport Improvement Plan* is required, and the NSW Government's decision to sell a long-term lease of Port Botany, are significant developments. They offer some prospect of bringing about a holistic response to the problem of handling port-related freight and a means of raising private sector funds that can be used to invest in the M5 corridor.
- i) Evidence presented in the recent report of the *Joint Study on Aviation Capacity in the Sydney Region* suggests that, while the M5 may be important for moving aviation-related freight and for operational servicing of Kingsford Smith Airport, the proportion of airport passengers and employees using the road is likely to be quite limited.

F3 - M2 Corridor

- j) On the NSW Government's own analysis, the previous F3 - M2 proposal is uneconomic to develop. The F3 - M2 needs to be re-scoped as a high value vehicles link to provide a greater focus on the movement of freight and the development of new road-based public transport services from the Central Coast. The link could be supported by bus-priority arrangements on the current F3 and other northern Sydney roads. A more strategic review of options to meet medium to long-term transport demand in the corridor between Sydney and Newcastle is required.

Financing and Funding Options

- k) The NSW Government's decision to sell a long-term lease of Port Botany is critical for several reasons:
 - funds from the long-term lease could be invested in the necessary land transport links, although this is dependent on the structure of the sale. Some of the expected proceeds have already been committed by the NSW Government towards meeting its share of the cost of various improvements to the Pacific Highway, as well as future upgrades on the Princes Highway (amongst other projects);
 - the prospective lease is attracting significant overseas institutional interest, not only in Port Botany as a 'stand alone' facility but in a package of related 'growth assets' that could include Kingsford Smith Airport, the M5, Moorebank intermodal terminal and other land transport links; and
 - private sector owners will push strongly for operational and logistical improvements that are necessary to maximise the return on capital.
- l) The NSW Government's objective of concluding a long-term lease of Port Botany by mid 2013 presents a range of significant challenges and risks.
- m) Concluding a long-term lease by mid 2013, particularly one that has some prospect of maximising proceeds for government, will require a range of decisions with major strategic implications - including decisions on the M5, Moorebank freight terminal and any lifting of the 'cap' on throughput at Port Botany - to be taken by mid 2012. The rigorous and comprehensive planning exercise proposed by the NSW Government and recommended below is unlikely to be completed in that timeframe.
- n) Although the leasing process has been initiated by the NSW Government, the national significance of Port Botany (and the fact that the NSW Government has been looking to the Australian Government to provide funding for the M5 East) suggest that the Australian Government needs to be engaged with the leasing process.
- o) Irrespective of the port leasing process, demand management options (including road pricing) are amongst the lead options that governments should consider to address problems in both corridors.
- p) Tolls on high value vehicles are likely to raise significant funds towards the development of a tightly scoped high value link in each corridor. As much of the freight rail infrastructure associated with the

development of the Moorebank terminal is likely to be funded through user charges, funding the high value vehicle links through tolls would encourage mode-neutrality.

- q) Network charging on the Sydney motorway network could also fund the links and other improvements to Sydney's freight and passenger transport networks. Network charging offers the best 'structural solution' to the challenge of funding improvements to Sydney's transport network, provided it is applied to well-conceived projects.
- r) The NSW Commission of Audit has recently canvassed the benefits that could come from a move towards a per kilometre and/or time of day charging on Sydney's toll road network and has recommended that Infrastructure NSW and NSW Treasury should investigate toll arrangements and provide options to the NSW Government on opportunities to make the toll road network more efficient. In addition, the NSW Government has recently publicly acknowledged the need to commence a community debate about the need for road user charging.
- s) A combination of tolling and a network charge is also worthy of further exploration, particularly if the cost of the proposed high value vehicle links is such that they cannot be funded through tolls on reasonable terms.
- t) The financial constraints facing governments in the short and long-term and the demands for major projects in Sydney and other parts of NSW (projects with a cost of more than \$75 billion have been identified in various plans) are such that there are few, if any, viable alternatives to the approach outlined above.
- u) Network charging based on a separate per kilometre charge for cars, trucks and light commercial vehicles could fund \$20 - 30 billion of investment over the next 15 – 20 years, which could meet most of Sydney's major transport needs (including public transport) over that period.
- v) Given the limited state of project development, even for the previous motorway proposals in the M5 and F3 – M2 corridors, the prospects for a successful private financing of corridor upgrades will be greatly improved by a period of more focussed strategic planning and project development.
- w) Given the range of issues involved in defining and developing both project proposals and funding options, a joint 'special purpose vehicle' between the Australian and NSW Governments needs to be established.

Recommendations

It is recommended:

1. The Australian and NSW Governments resolve outstanding issues associated with the development of the Moorebank intermodal terminal, and commit to the development of the Moorebank intermodal terminal (with an agreed split of funding, delivery responsibilities and development timetable) in their respective 2012-13 budgets.
2. The Australian Government approach the NSW Government with a proposal to establish a joint 'special purpose vehicle' to facilitate commercially-based development of Sydney's transport network (including private sector investment), and for the special purpose vehicle to:
 - a. oversee project development and procurement of new transport infrastructure in Sydney on a commercial basis, i.e. applying user charging to the maximum extent possible;
 - b. manage studies of other additions to Sydney's major transport networks, particularly those that can reasonably be developed on a commercial basis.

3. The special purpose vehicle focus initially on:
 - a. project development and procurement of high value vehicle links in the M5 and F3 – M2 corridors that can be funded largely if not wholly through user charges on commercial vehicles, and associated bus transport improvements, noting;
 - the associated bus transport improvements would include:
 - bus priority measures on existing motorways and other roads, including roads in:
 - western and south-western Sydney;
 - northern Sydney (i.e. centres from Hornsby through to the lower north shore); and
 - other corridors such as the northern beaches/Military Road corridor;
 - bus-priority traffic lights and lanes at intersections;
 - complementary development of new ‘parking stations’ around parts of the motorway network, starting with the F3 on the Central Coast;
 - purchase of a new fleet of buses to provide high frequency services between the parking stations and a range of destinations (particularly destinations not well served by rail);
 - the limited project development to date on previous proposals for upgrades in the M5 and F3 – M2 corridors;
 - financial close on any private financing would normally occur after the completion of environmental impact assessment processes;
 - b. investigations into:
 - options for future land transport links to/from Port Botany and Kingsford Smith Airport, i.e. beyond development of the Moorebank intermodal terminal and a high vehicle link in the M5 corridor;
 - options for multi-modal (and potentially multi-sectoral) links for the Sydney-Newcastle-Wollongong conurbation that build upon the conclusions from:
 - responses from the two governments to the *Joint Study on Aviation Capacity in the Sydney Region*; and
 - the final report on investigations into a potential high speed rail link.
 - c. contributing to any broader community debate on road charging as a means of funding new transport improvements and managing transport demand in Sydney.
4. The Australian and NSW Governments commit funding in their respective 2012-13 and 2013-14 budgets for the investigations and studies identified in recommendation 3(b) above.
5. The NSW Government be encouraged to review the timing of the leasing process for Port Botany, both to:
 - a. enable input from the integrated land transport planning proposed by the NSW Government to inform the leasing process; and
 - b. increase the likelihood that a long-term lease will maximise proceeds for the NSW Government and strategic outcomes for both governments.

6. The Australian Government note the lead being shown by the NSW Government in identifying the need for governments and the community to debate the arguments for and against road charging as a means of:
 - a. funding future upgrades to Sydney's transport networks; and
 - b. managing transport demand.
7. The NSW Government be encouraged to lead that debate (with active input from the Australian Government), including:
 - a. development of a strategy (with input from Infrastructure NSW and Infrastructure Australia as required) for leading and managing that debate; and
 - b. development of proposals, including options for network charging, that can be considered by the community as part of that debate.

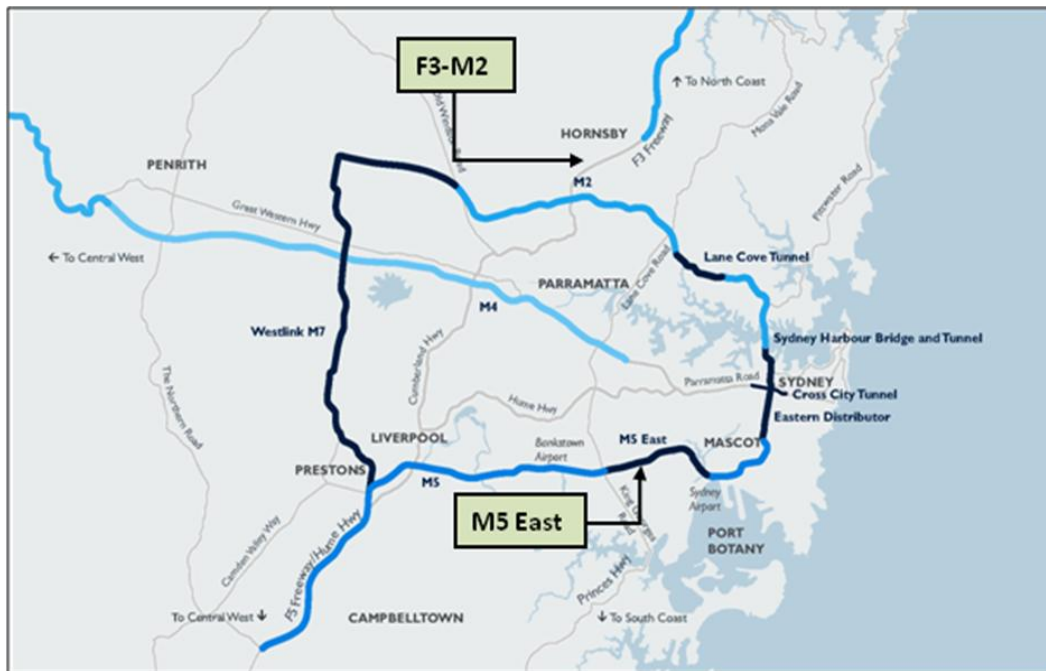
Introduction

This report has been prepared in response to a request from the Australian Minister for Infrastructure and Transport for advice on:

- private financing options for the M5 East and F3 - M2 motorway projects in Sydney; and
- how the projects can be 'brought to the market' as soon as possible.

Proposals for motorway projects in the M5 and F3 - M2 corridors have been presented to Infrastructure Australia in 2008, 2009 and 2010.¹ The location of these corridors is shown in Figure 1. The previous proposals are shown in Appendix 1.

Figure 1: M5 East and F3 - M2 Proposal Locations



Source: NSW Roads and Traffic Authority, with annotations by Office of the Infrastructure Coordinator.

In response to these proposals, Infrastructure Australia concluded that, whilst the need for improvements in the corridors had been identified, the case for the specific proposals had not been established. Other solutions could better address the range of needs in each corridor.

In its June 2011 report to the Council of Australian Governments, Infrastructure Australia rated 'Freight Access to Port Botany and Kingsford Smith Airport – M5 East' as an initiative showing 'Real Potential' and 'Northern Sydney Road Freight Access – F3 - M2' as an 'Early Stage' initiative.² The description of the initiatives, and their incorporation against the 'Competitive International Gateways' and National Freight Network' themes was significant.

¹ A proposal for an M4 East motorway was also presented in 2008 and in 2010. It was rated as 'Early Stage' in Infrastructure Australia's June 2011 report to the Council of Australian Governments. A proposal for an inter-modal terminal at Moorebank was presented to Infrastructure in 2008, and was the subject of further investigations in 2009. In the 2010-11 Budget, the Australian Government committed \$70 million to feasibility studies of terminal options, and the associated relocation of the School of Military Engineering. The terminal was rated as 'Threshold' in the June 2011 report. See Infrastructure Australia (2011), p. 81.

² Infrastructure Australia (2011), pp. 80-81.

Infrastructure Australia did not support the specific propositions presented for its consideration; rather it was acknowledging that some form of transport improvement in these corridors was required. The alignment against the gateways and national freight themes was intended to emphasise that road upgrades in these corridors need to be considered primarily as a means of improving the movement of freight.

This report takes a 'corridor approach' to examining project and financing options, rather than simply reviewing financing options for the proposals previously submitted to Infrastructure Australia.

Current Status

The November 2011 submission from the NSW Government to Infrastructure Australia did not include investment proposals for the M5 and F3 – M2 corridors.

The submission sought Australian Government funding to assist in developing a *Port Botany and Sydney Airport Transport Improvement Plan*. The plan would have a 25-30 year outlook.³ The submission suggests that the plan be finalised by mid-2013 and that the environmental impact assessment process for the preferred infrastructure options would then take a further 18 months (to the end of 2014).

No equivalent proposals for planning and feasibility studies were made in respect of the F3 – M2 corridor.

In response to a request for comment on a draft version of this report, the Director General of Transport for NSW wrote to the National Infrastructure Coordinator on 30 January 2012, advising that:

The key issues raised in the draft report are now being addressed under various processes underway in NSW, including:

- *The NSW Long Term Transport Master Plan 2012-2031, being developed by Transport for NSW during 2012 in consultation with the community and stakeholders;*
- *Infrastructure NSW's (INSW) Port Botany/Sydney Airport precinct statement;*
- *The investigations proposed in the November 2011 NSW Government submission to Infrastructure Australia for a Port Botany and Sydney Airport Transport Improvement Plan; and*
- *The 20-year State Infrastructure Strategy to be developed by INSW during 2012.*

The plans to be developed will address expansion of Sydney's motorway network, including financing options, along with freight transport and intermodal terminals.

Report Structure

The report broadly follows the steps in Infrastructure Australia's Reform and Investment Framework.⁴

The national objectives against which project and funding options can be addressed are identified in the first section. Problems, such as a decline in productivity, that bear on the nation's ability to achieve those objectives are then examined.

Project options are then identified and assessed against their ability to support the national objectives and deal with the problems set out in the earlier sections. Funding options are then identified and assessed.

Finally, issues affecting the ability to take projects in the corridors to market as soon as possible are considered. The report finishes off with a series of overall conclusions and recommendations that are aimed at ensuring that well-conceived projects in both corridors can be successfully taken to market as soon as possible.

³ Some initial work on transport issues and options in the port/airport environs has been undertaken by or on behalf of the NSW Government in the last six months. That work has not been provided to Infrastructure Australia. The recent work may provide useful information and input to the more wide-ranging planning work proposed in the NSW Government's November 2011 submission to Infrastructure Australia. The recent work will need to be reviewed and assessed carefully. The work should not be accepted as a *fait accompli*, or seen as a set of 'obvious answers'. It is vital that a truly new, integrated and strategic view be brought to bear on the land transport issues confronting the port and airport.

⁴ Infrastructure Australia (2010)

Objectives for Assessing Corridor Project and Funding Options

Infrastructure Australia's Reform and Investment Framework invites proponents to take a 'big picture' view of national and state goals and objectives when assessing potential infrastructure investments. This approach minimises the risk of investing scarce capital in 'obvious' projects the need for which has not been adequately demonstrated.

The framework requires a consideration of how investment or management reforms in the M5 and F3 – M2 corridors could support the achievement of national and NSW economic, environmental and social goals. Making 'balanced progress' towards the goals and objectives may involve some policy trade-offs.

As both the M5 and F3 – M2 corridors lie within Australia's largest capital city, it is appropriate to consider the project and funding options against the national goals for cities and for transport. The Council of Australian Governments' (COAG) agreed objective for the planning and development of Australia's capital cities is:

To ensure Australian cities are globally competitive, productive, sustainable, liveable and socially inclusive and are well placed to meet future challenges and growth⁵.

Relevant objectives can also be found in the *National Urban Policy*⁶, notably:

- improving labour and capital productivity
- integrating land and transport
- improving the efficiency of urban infrastructure
- reducing greenhouse gas emissions and air pollution.

These objectives align closely with Infrastructure Australia's own strategic priorities, and, in particular it's interest in improving productivity.⁷

The government's fiscal strategy, set out in the 2011-12 Budget⁸, aims to return the budget to balance by 2012-13 and to then keep the budget in balance over the medium-term. The strategy has implications for the assessment of funding options.

The Government's *Climate Change Action Plan*⁹ sets various targets to reduce greenhouse gas emissions. Corridor options which encourage private vehicle use are, other things being equal, more likely to increase greenhouse emissions and make the task of achieving the targets more difficult.

Including road freight in the carbon pricing regime from mid 2014 is likely to:

- affect the cost of and relative demand for road freight versus rail freight; and
- introduce some degree of uncertainty in relation to privately financed infrastructure proposals, notably where road freight is projected to be a significant proportion of the transport demand and project revenues.

In short, project and funding options need to be assessed against their ability to support these national objectives.

⁵ Council of Australian Governments (2009)

⁶ Australian Government (2011)

⁷ Infrastructure Australia's seven strategic priorities, four of which deal with economic issues, are set out in its *Better Infrastructure Decision Making Guidelines* – see *Infrastructure Australia* (2010).

⁸ Australian Government (2011a)

⁹ Australian Government (2011b) – for example, the plan commits to a minimum 5% reduction in greenhouse emissions by 2020 compared to 2000 levels, and, depending on the commitments of other nations, by between 15 and 25% by that date. The plan also sets a target of an 80% reduction in greenhouse emissions by 2050.

Problems Challenging Achievement of the Objectives

The reform and investment framework encourages proponents to analyse relevant problems that risk achievement of the proponent's goals. The problem analysis is aimed at encouraging proponents to think rigorously and laterally about potential solutions rather than 'jump to' an 'obvious' solution.

Key problems relevant to the government objectives identified in the previous section and the two corridors are:

- slowing growth in productivity;
- population growth and associated growth in travel demand (in the absence of demand management measures, including pricing);
- demand for infrastructure far exceeding available government funds to provide new infrastructure, combined with a mismatch in community expectations and willingness to pay; and
- rising greenhouse gas emissions, particularly in the transport sector.

Weaknesses in strategic planning and infrastructure project development processes, both nationally and in NSW, raise legitimate questions as to whether these problems are being effectively addressed. In turn, these governance-related weaknesses raise material questions about the ability of the previous proposals for the two corridors to address the problems above.

Slowing Growth in Productivity

The rate of productivity growth in Australia has been slowing over the last 10 years. Productivity growth rates are now below the average of member countries in the Organisation for Economic Co-operation and Development.¹⁰

The Sydney region accounts for around 20% of Australia's Gross Domestic Product. Improving productivity in Sydney, particularly in the M5 corridor connecting to two of the nation's export-earning gateways – Port Botany and Kingsford Smith Airport – is therefore an essential part of any broader effort to raise national productivity.

Yet, despite a material shift in freight movements to the port occurring at night and on weekends¹¹, delays in the movement of freight through Port Botany have been increasing. Industry sources have suggested truck drivers have been queuing for several hours per day at the port.¹² These delays (and their cost to productivity) have been offsetting productivity growth elsewhere in the economy.

Congestion costs in Sydney (which bear on productivity) have been projected to increase from \$3.5 billion per annum in 2005 to \$7.8 billion in 2020¹³. In the absence of new models for managing transport demand, these costs will increase over time.

Population Growth

On medium level projections, the population of the Sydney-Newcastle-Wollongong conurbation is expected to grow from around 5.1 million people in 2006 to around 7 million people by 2036 and slightly over 8.1 million people by 2056, an increase of almost 60% from the 2006 figure.

¹⁰ Infrastructure Australia (2011), pp. 12-13

¹¹ The proportion of truck movements through the Port occurring late at night or on weekends grew from 6% to 30% between 1999 and 2007. See Sydney Ports Corporation (2008).

¹² Robins, B. (2009)

¹³ Bureau of Transport and Regional Economics (2007), p. xv

The NSW Government's *Metropolitan Plan 2036* and other regional strategies for the Central Coast, Lower Hunter, and Illawarra provide a 20-25 year perspective on the development of these areas. A map of the *Metropolitan Plan* is attached at Appendix 2.

Population growth in the metropolitan area is planned to occur largely in established areas, though growth centres in Sydney's south west and north west are planned to accommodate an additional 300,000 and 200,000 people respectively over the next 20 years.

As shown in Appendix 2 most of the land that has been (or will be) zoned for industrial purposes is in south-west and north-west Sydney. This emphasizes the need for high quality freight links between the port and those areas.

The *Metropolitan Plan* and the separate regional strategies do not bring together an effective 'whole of conurbation' view, particularly one that offers a guide as to how more than two million additional people could be accommodated within the Sydney region alone over the period to 2056. This longer term perspective is needed to establish if a consensus can be reached about:

- whether (and how) the Sydney region can accommodate sustainably the scale of additional growth and,
- if not, the need to accommodate population growth outside of Sydney.

This bears on the case for improvements in the northern Sydney (F3 - M2) corridor in particular.

Transport Network Performance - Prospective Growth in Travel Demand

The M5 and Pennant Hills Road (which would be complemented by the proposed F3 – M2 motorway) are two of the busiest roads in the Sydney transport network. Traffic volumes along the M5 vary between 80,000 and 115,000 vehicles per day. Average traffic volumes along Pennant Hills Road are around 75,000 vehicles per day. Trucks represent around 10% of traffic using the M5 and Pennant Hills Road.

The limited data available suggests that morning and afternoon peak hour travel speeds on the M5 and the F3 to Sydney corridor (which shares some of the traffic that might use an F3 – M2 motorway) are faster than the average for a sample of seven major corridors in the Sydney region. Apart from a deterioration in morning peak speeds on the M5 (from 44 km/h to 35 km/h), average travel speeds on the two corridors have remained (or even improved slightly) between 2006 and 2010.¹⁴

Containerized freight volumes through Sydney's ports have grown at an average rate of 7.6% per annum over the last 40 years. Port Botany is now handling two million twenty foot equivalent container units (TEUs) per annum. Substantial growth in container throughput is projected, reaching 7.5 million TEUs by 2030-31.¹⁵ Previous NSW Government submissions to Infrastructure Australia have suggested that, at those growth rates, port throughput would grow to around 13 million TEUs by 2040.

Development of a third terminal is due for completion in late 2012, and will provide Port Botany with quayside capacity of at least 7.5 million TEUs per annum. Some argue it will provide capacity for a higher throughput. On the other hand, the current planning approval for the port limits throughput to 3.2 million TEUs. Increasing throughput beyond that figure, which on current growth rates will be reached in 2017-18, will require a further planning approval.

That approval process is expected to turn almost wholly on land transport issues associated with the port. Formal planning approval for any increase in the permitted throughput (or alternatives to that course of action) is the responsibility of the NSW Minister for Planning and Infrastructure.

¹⁴ NSW Roads and Traffic Authority (2010a)

¹⁵ NSW Department of Premier and Cabinet (2011)

As a result, the key strategic issue for the consideration of the M5 corridor in particular, and, to a lesser extent, the F3 – M2 corridor is whether Sydney's future container handling needs will be accommodated through Port Botany, the Port of Newcastle, Port Kembla, or a combination of ports.

Existing and current investment in the port, and the fact that 85-90% of containers passing through Port Botany have an origin or destination in the Sydney region, point to the strong economic case for accommodating future container movements through Port Botany.¹⁶

The majority of containers (around 70%) transported to/from Port Botany have an origin/destination in south-western and western Sydney. This pattern will intensify over time, as the *Metropolitan Plan* proposes that most new industrial land will be located in south west Sydney (including the 110km² western Sydney industrial area) and, to a lesser extent, in the north west. This pattern is likely to intensify further if decisions are taken not to proceed with a second airport at Badgerys Creek and, instead, release the previously reserved airport site for urban development.¹⁷

Proposals for a freight-focused investment in the M5 corridor are likely to be a higher priority than proposals for an M4 East motorway extension.

Considerable scope exists to improve the utilization of existing transport infrastructure, particularly rail, serving the port. Weaknesses in rail arrangements at the port are a particular problem. The existing stevedores are doing little to facilitate the movement of containers by rail.

As a result, whilst the volume of containers moved by rail has increased, the proportion of containers moved by rail to/from Port Botany has fallen over the past decade from around 22% in 2000 to 14.0 % in 2010-11.¹⁸ The NSW Government is aiming to increase the rail mode share to 28% by 2020-21, and expects the rail mode share to stay at this targeted level until 2030-31.¹⁹ The NSW Government had previously adopted a 40% rail mode share target.

Achieving a substantial increase in rail mode share is fundamental for Sydney's development, though it will require further investment in the rail network, development of intermodal terminals, and continuing operational reforms in the rail network and at Port Botany.

In this context (and bearing in mind the future concentration of employment lands in south-western Sydney), the development of an intermodal terminal at Moorebank is essential. It is difficult, if not impossible, to see how the proportion of containers moved by truck can be reduced without such a facility.

Even if the previous 40% rail mode share target is achieved, the number of containers moved by road will grow substantially. At 7.5 million TEUs per annum, and assuming a 40% rail mode split, some 4.5 million TEUs would need to be transported by road, compared to around 1.6 million TEUs at present. Additional investment in freight-focused roads, and in rail freight will be required to service projected demand.

Significant increases in two other forms of freight transport - the distribution of goods within the conurbation by truck or light commercial vehicle, and the movement of interstate freight - also add to the urgent need for freight focused improvements in the road network. Without these improvements, Sydney's networks will only become more congested, risking the city's and the nation's economic health.

The M5 corridor will be more important than the F3 - M2 for the movement of vehicles associated with:

- the servicing of Kingsford Smith Airport's operations; and
- high value freight.

¹⁶ Approximately \$1 billion of public and private investment is being directed to the port's current expansion.

¹⁷ Technical Paper D1 for the Joint Study on Aviation Capacity in the Sydney Region indicates that the site is almost 17 km² in area, and that 80% of the site is capable of supporting urban development.

¹⁸ Gunn, S. (2012)

¹⁹ NSW Department of Premier and Cabinet (2011), Port Botany and Sydney Airport Transport Improvement Plan tab, p.13.

Data collected on behalf of the airport's owners suggest that around 10% of passengers have origins and destinations in areas that might be served wholly or partly by the M5, and only 2-3% have origins and destinations that might be served by an F3 – M2 motorway.

Appendix 4 presents maps from the recent report of the Joint Study on Aviation Capacity in the Sydney Region. The material, drawing on other data compiled by the Bureau of Infrastructure, Transport and Regional Economics, confirms the airport owner data.

The maps show that a relatively small proportion of Sydney residents using the airport come from areas served by the M5. Over 40% of air travel visitors to Sydney have a destination in the City of Sydney, with the 'East and Inner North sectors' being the next most significant destinations.

Airport-related employees live mainly in areas around the airport, e.g. Rockdale, Sutherland, Kogarah and Botany.²⁰ Measures such as removal of the existing 'station access fee' for airport employees using the two airport railway stations would improve transport opportunities for staff. Development of a high-value vehicle link to Foreshore Road and the airport precinct would also reduce congestion around Southern Cross Drive and General Holmes Drive affecting airport employees.

The available data therefore indicates that airport passenger and employee traffic is not a significant user of the M5. On the other hand, given the distribution of industrial, manufacturing and service industries in Sydney, the M5 is likely to be important for air freight and servicing of the airport's operations.

Demands on Government Funds

Australian Government infrastructure outlays in the transport sector have increased significantly over the last decade, to just under \$7 billion in 2011-12.²¹ This amount, the highest ever by the Australian Government, reflects the significant stimulus funding introduced in response to the global financial crisis.

If transport outlays return to the order of outlays prior to the global financial crisis, notionally \$3 billion per annum, the total funds available over the next decade (after the commitments through to 2013-14) would be broadly \$20 billion. Significant commitments against that figure are already in place.²²

As noted earlier, the NSW Government's estimates of the cost of the previous M5 East and F3 - M2 projects are presently \$4.5 billion (\$2010) and \$4.75B (\$2008) respectively. In 'outturn costs', i.e. the cost that is more relevant in assessing demands on government budgets, the total figure is probably in the order of \$15 billion. In short, on the high level projections of Australian Government transport budgets noted above, making the scale of financial contributions to the motorway projects presently sought would commit the majority of the Australian Government transport budget for the next decade.

The projected cost of urban transport project proposals (i.e. excluding proposals for projects in regional Australia) submitted for Infrastructure Australia's consideration to date is around \$120 billion.²³ Whilst Infrastructure Australia has questions about many of these proposals, and would not necessarily recommend them as 'Ready to Proceed' projects, the figure nevertheless points to the scale of the fiscal challenges facing both the Australian and State/Territory governments.

The Government's *Inter-Generational Report 2010* highlights the difficulties facing governments as the country deals with an ageing population. Even assuming that outlays such as those in the transport sector remain constant as a proportion of Gross Domestic Product (GDP), the Australian Government budget is projected to enter a fiscal gap²⁴ within 20 years, reaching an annual gap of around 2.75% of GDP by

²⁰ Bureau of Infrastructure, Transport and Regional Economics (2012), pp. 7-8

²¹ Infrastructure Australia (2011), p. 17

²² The Australian Government transport infrastructure outlays include the local roads component of revenue sharing grants to Local Government. These are budgeted at around \$500 million in 2011-12.

²³ The metropolitan and other plans of various State and Territory Governments include a range of other projects that are outside the \$120 billion figure above. The respective jurisdictions may look to the Australian Government to co-fund those extra projects.

²⁴ 'Fiscal gap' is the present value of the difference between projected government revenues and expenses, including interest receipts and payments. An alternative statement of the 'fiscal gap' is the immediate and permanent increase in tax revenue or

2049-50. To place this percentage in perspective, a fiscal gap of 2.75% of today's GDP is around \$39 billion.²⁵

The financial picture at the State level mirrors the national one to a significant extent. Like the Australian Government, the NSW Government faces a significant fiscal gap over the long term. In its 2011-12 Budget, the NSW Government projected that, under current policy settings, the State's fiscal gap will increase to 2.8% of gross state product by 2050-51.

Reflecting that reality, the 2010 *Metropolitan Transport Plan*²⁶ (which substantially increased transport capital funding) made no allowance for NSW Government investment in either corridor over the next 10 years. The latest (November 2011) NSW Government submission to Infrastructure Australia does not make any proposals in relation to the M5 and F3 – M2 corridors, and, in effect, argues that further planning is required in relation to the land transport requirements of Port Botany and Kingsford Smith Airport (including potential upgrades in the M5 corridor).

Factors Affecting Travel Demand - Energy Prices, Climate Change

Several factors - real increases in energy prices due to rising global oil demand, a national response to climate change and the development of the National Broadband Network - have the potential to affect the demand for road transport, both generally and within the M5 and F3 - M2 corridors.

All three factors have the ability to decrease the extent to which people travel, and the first two could also affect travelers' mode choice. Evidence from overseas and Australia suggests that the rate of travel by motor vehicle is flattening out.²⁷

These factors create significant uncertainties when assessing demand for projects in the two corridors. The impact of these factors has not been considered in any depth in the project studies to date, although they present patronage and financial risks for private parties and/or governments investing in these projects. These uncertainties add to the case for a staged, freight-focused approach to the development of road upgrades in both corridors.

Weaknesses in Strategic Planning and Project Development

Planning for freight movements, especially containerised freight movements to and from the port, is probably the most significant weakness in transport planning in Sydney and, arguably, Australia. It has been fragmented, mode-specific and tactical rather than coordinated, integrated and strategic. The strategic weaknesses have permeated down to the project development level. Addressing these structural weaknesses is vital for the future of Sydney and the nation.

In summary, to address the problems above, and to support the achievement of the objectives mentioned earlier, project and funding options for the two corridors need to demonstrate:

- a focus on improving the productivity of the freight sector;
- efficient movement of people;
- limiting capital outlays;
- minimising greenhouse emissions; and
- a focus on minimising demand-related risks, e.g. those associated with changing demographics, higher energy costs, and the introduction of new communications technologies.

reduction in expenditures that would be required to maintain the current debt to GDP ratio. The fiscal gap is an important metric of fiscal sustainability. It should not be confused with the 'primary balance', which excludes interest payments of government liabilities. For a discussion of the differences between public accounting identities see Auerbach, A. J. et al. (2003).

²⁵ Estimates from the Australian Bureau of Statistics suggest that, in the year to December 2011, Australia's Gross Domestic Product (in current prices) was slightly more than \$1,400 billion.

²⁶ NSW Transport and Infrastructure (2010)

²⁷ See for example Millard-Ball and Schipper (2011) and Bureau of Infrastructure, Transport and Regional Economics (2012a)

Project Options to Deal with the Problems

As well as the previous tunnelled motorway proposals described in Appendix 1, the key options in both corridors are set out below.

Demand Management Measures

These include the introduction of broad forms of road pricing, or other approaches to assign existing road capacity to 'high value' vehicles, i.e. trucks, light commercial vehicles, buses, and, possibly cars used by several people (notionally like a T3 lane).

Managed Motorways

The NSW Government has identified a \$200M (real \$2010) managed motorways proposal for the M5 East. The scope of the proposal, and its impact on traffic conditions on the motorway are still under development. Clearly, without an existing motorway in the F3 – M2 corridor, a managed motorway is not an option in that corridor.

'High Value Vehicle' Links

These would generally involve the construction of two lane tunnels open only to 'high value vehicles', i.e. trucks, light commercial vehicles, buses, and, possibly cars used by several people (notionally like a T3 lane).

In the case of the M5 corridor, a high value link would need to extend under the airport to Foreshore Drive (to overcome a serious weakness in the previous M5 East design).²⁸ Such a link could provide improved access for freight and commercial vehicles to the port, and to areas around the domestic terminal (an area of relative weakness in the previous motorway proposal). Improvements to the M5 East section of the corridor would need to be complemented by measures on the M5 West, to provide an overall 'corridor solution' to improving road freight in the M5 corridor.

A high value vehicle link in the F3 – M2 corridor could address the growth in inter-state road freight, by providing a high quality link between the F3 and the M2/M7. Trade contractors travelling to/from the Central Coast could also use the link, improving their productivity.

In both corridors, the links could be complemented by bus-priority measures on feeder roads. In this way, dedicated bus services could operate from suburban areas:

- in Sydney's south-west to commercial centres not well serviced by the rail network (notably parts of southern Sydney); and
- from the Central Coast to a number of commercial centres on Sydney's north shore, e.g. parts of Macquarie Park, Ryde, Norwest that, again, are not well served by the rail network.

New Rail Links

These include proposals for:

- development of intermodal terminals at Moorebank and Eastern Creek (in western Sydney) supported by new investment in dedicated freight rail; and
- upgrades to or new passenger rail links, including high speed rail in the F3 – M2 corridor.

²⁸ The previous NSW Government proposal (shown in Appendix 1) would leave freight vehicles approaching Port Botany with one of two unsatisfactory options to reach the port:

- a surface link ending at Sydenham, several kilometres from the port and at a point where truck movements to/from the port would conflict with airport traffic; and
- requiring trucks to mix with general traffic between Arncliffe and Foreshore Drive. One section (between the M5 and General Holmes Drive would be four lanes only (after leaving what would be an eight lane section of motorway at Arncliffe).

Assessment of the Project Options for Each Corridor

In its 2011 report to the Council of Australian Governments, Infrastructure Australia stated that:

Unless urban road proposals:

- *are scoped in line with the [following] principles:*
 - *[making better use of existing networks;*
 - *the efficient movement of freight; and*
 - *the efficient movement of road-based public transport;] and/or*
- *provide for tolling/charging to recover the cost of the project(s), and send signals that will influence demand,*

*Infrastructure Australia is highly unlikely to support the proposals for funding by the Australian Government.*²⁹

These principles have relevance for the assessment of project and funding options in the two corridors. In both corridors, demand management and 'high value' vehicle link options are most likely to provide a cost effective complement to investment in rail, especially public and private investment in the Moorebank intermodal terminal.

This package of measures provides an integrated means of addressing the problems threatening the achievement of the national goals.

Development of an Intermodal Terminal at Moorebank

Infrastructure Australia views the development of an intermodal terminal serving import/export freight, as well as inter and intra-state freight, as one of the most important infrastructure projects in the country. Equally, Infrastructure NSW views the Moorebank terminal as one of the most important projects in NSW.

Development of the Moorebank terminal is essential, no matter what road-based option is ultimately pursued for the M5 corridor. It ought to be the first decision taken by both governments to address the freight challenges facing Australia's largest city.

Moorebank is vital not only for import/export freight using Port Botany, but is also critical for inter-state freight, thereby moderating prospective growth in road-based freight. As such, the Moorebank terminal also bears on freight demand in the northern Sydney corridor that would be served by an F3 - M2 link.

The first stage of investigations on the Moorebank intermodal terminal proposal is understood to have confirmed that:

- in light of projections of around eight million TEUs by the early 2030s, there is an economic case for development of an import/export terminal at Moorebank capable of handling around one million TEUs by the mid 2020s, with the potential for staged development of a complementary inter-state terminal capability;
- the southern Sydney freight line has sufficient capacity to handle port shuttle trains and inter-state traffic, until the mid 2020s, but is likely to require some augmentation after that date;
- road improvements will be required, either in the form of some widening of the M5 between Moorebank Avenue and the Hume Highway or development of a new road from south of the terminal towards the junction of the M5 and M7; and
- for the terminal proposal to work, complementary operational improvements are required at Port Botany.

²⁹ Infrastructure Australia (2011), p.34

Infrastructure Australia and Infrastructure NSW hosted a workshop involving relevant parties on 15 March 2012 to address these issues, with the aim of providing consolidated advice to the Australian and NSW Governments on the development of an intermodal terminal at Moorebank.

M5 Corridor

The most significant weakness in the previous M5 motorway proposal is that, whilst the project is ostensibly aimed at improving the movement of freight, the project scope fails to provide an effective link to Port Botany. The previous design leaves truck drivers some kilometres short of Foreshore Road, i.e. the road linking the port to the motorway network. Sydney Ports Corporation wrote to the Office of the Infrastructure Coordinator in mid 2011 stating,

Sydney Ports Corporation considers it essential that any proposal to expand the M5 East should ensure that additional capacity is provided directly to Port Botany. The current proposal would not achieve this as it would not address the current capacity constraint from the end of the M5 East along General Holmes Drive.

The ability of the rest of the M5 (i.e. west of King Georges Road) to provide an adequate level of service, especially for freight vehicles, is not assured. The NSW Government announced in December 2011 that it had reached an in principle agreement with the owners of the western section of the M5 (Interlink Roads) on funding a \$410 million widening of the western section of the M5 (see map at Appendix 1).

There is a risk that, unless the final negotiations around widening of the M5 West also address the need for priority to be given to higher value vehicles such as trucks and light commercial vehicles, the performance of this western section of the M5 may undermine any investment in the M5 East. In short, trucks might have a quicker run between the port and King Georges Road (as a result of investment in the M5 East section of the corridor), only to be caught in mixed traffic from that point.

As shown in Appendix 1, the proposed M5 West widening excludes the section of the M5 near the proposed Moorebank inter-modal terminal. The reason why widening of this section of the M5 has been excluded from the negotiations between the NSW Government and Interlink Roads is unclear.

A rapid economic appraisal of the managed motorways proposals undertaken by the former NSW Roads and Traffic Authority suggests the proposal could have a very high benefit cost ratio (over 10:1). This is in line with the expected economic returns on other high quality managed motorway proposals.

A balanced portfolio of investment in:

- the Moorebank intermodal terminal;
- a two lane high value vehicle link in the M5 East corridor as far as Foreshore Road (complemented by measures to protect service standards for high value vehicles in the M5 West, e.g. assigning a lane in each direction for high value vehicles); and
- managed motorway applications

is most likely to be capable of addressing the problems identified in the previous section and thereby supporting achievement of the objectives identified earlier in the report. It would provide the capacity to handle container growth through Port Botany for many years. The cost of the portfolio of projects is probably not dissimilar to the cost of the previous M5 East motorway proposal.

The principal benefits of an overall solution consisting of the Moorebank intermodal terminal complemented by the southern Sydney freight line compared to a road solution is that it would defer costly new investment, leverage recent Commonwealth Government investment in the southern Sydney rail line and progress achievement of the 40% rail modal share of container traffic.

F3 – M2 Corridor

The previous (2010) submission from the NSW Government included material indicating that an F3 – M2 motorway proposal would destroy economic value (the six lane tunnel option was judged as having a benefit cost ratio of around 0.6:1). This is likely to be a consequence of the high cost of the project - it was then estimated to cost \$4.8 billion (\$2008) - and traffic volumes (although high) and speeds that are insufficient to generate a positive benefit cost ratio.

Re-scoping the project to focus on freight and improvements in bus-based public transport from the Central Coast is likely to provide a more cost-effective solution to the transport needs of Sydney and the Central Coast. Such an option could involve:

- a two lane high value vehicle tunnel using the preferred route;
- high occupancy vehicle lanes on the existing F3 between the Central Coast and northern Sydney, on Pennant Hills Road, and into key commercial centres³⁰;
- car parking stations on the Central Coast, e.g. at various points along the F3; and
- (potentially) acquisition of a new, air-conditioned 'commuter' bus fleet, providing services from the Central Coast directly into major employment centres in Sydney (particularly northern Sydney).

The cost of such a project is probably of the order of \$2 - 3 billion, based on the per kilometre costs for other tunnel projects, costs of introducing bus priority measures, multi-deck car spaces and procurement of a fleet of buses.

Limiting use of the link to freight vehicles, light commercial vehicles, buses and high occupancy vehicles is likely to generate the highest value solution because it would help capture time and fuel savings for those consumers who value these most.

There have been previous suggestions from some parties that alignments for an F3 – M2 link east of Pennant Hills Road (the route identified in previous studies) might be preferable. The Office of the Infrastructure Coordinator does not agree. The current alignment provides the most effective route for freight movements (given it provides the most direct access to the M7 and industrial areas of south west and south industrial areas of Sydney). Alignments to the east would direct more traffic towards the lower north shore and Sydney CBD, areas that are already congested.

³⁰ See Unsworth (2004), a review of bus servicing and contracting arrangements in New South Wales, which recommended to the NSW Government that a network of higher quality 'strategic bus corridors' be developed across Sydney. These corridors would be supported by bus priority measures. In its response to the report, the then NSW Government broadly supported the recommendations for strategic corridors and bus priority measures.

Financing and Funding Options

The terms 'financing' and 'funding' are frequently but incorrectly used interchangeably. 'Financing' refers to the source of capital to pay for the development of a project. 'Funding' refers to the source of funds to repay the finance, that is, the particular methods by which the finance is repaid, which generally take the form of government revenue or user charges, such as tolls.

Private financing of projects up to a value of approximately \$5 billion is possible in the current market, provided there are suitable funding arrangements and provided the contract packages are suitably structured. As the previous project proposals for each corridor are expected to cost about this amount in real terms (and therefore a greater amount in outturn dollars), financing the previous proposals is likely to be at the limit of (or potentially beyond) current market capabilities.

Government Funding Constraints

New funding arrangements are required for projects in these corridors, whether they are the previous motorway proposals or the high value vehicle links recommended in this report. This is due to the well documented challenges posed by the twin dilemma of the fiscal constraint facing public budgets and the community's perceived resistance to user charges.

As Infrastructure Australia noted in its 2011 Report to the Council of Australian Governments, there appears to be a 'profound disconnect' in the Australian community's approach to infrastructure funding:

We are reluctant to increase government debt (although our national debt levels are amongst the lowest of any developed country); baulk at raising taxes to pay for better infrastructure and services; are uncomfortable with the 'user pays' concept, and are against 'recycling capital' [selling assets to reinvest the proceeds into new assets].

Yet we are concerned about congestion, we are concerned about the health and security of our water supplies, we are concerned about the prospect of electricity 'brown outs', and we recognize the need to modernise our telecommunications.³¹

The prospective long-term fiscal gaps facing the Australian and NSW Governments need to be set against proposals for new transport infrastructure in Sydney. Current proposals in Sydney alone (and it is not an exhaustive list) are estimated to cost at least \$75 billion. There are credible suggestions that the cost estimates for some of the projects are understated.

This analysis suggests that it will be difficult, if not impossible, for governments alone to fund all of these and other projects. In short, it is doubtful whether present or prospective transport strategies can be delivered using government funding.

Pricing Options

A large and increasing body of evidence has emerged in support of pricing as both a method of funding and a method of demand management. A recent report by global consulting firm Mercer for the Business Council of Australia argues for the application of user charges because:

...while many [infrastructure] projects have net economic benefits they are not commercially feasible because we cannot or do not price for the positive externalities they bring to the economy. As such there remains scope for broader adoption of user charging or direct government support in recognition of those externalities.³²

³¹ Infrastructure Australia (2011) p. 16.

³² Mercer (2011) p. 5.

The major review of taxation, *Australia's Future Tax System* (2010), also dedicated attention to the inefficiencies that are generated by the absence of cost-reflective pricing mechanisms in the operation of infrastructure. Specifically, the review³³ recommended that:

- Governments should consider introducing network-wide variable congestion pricing and that the use of revenues should be 'transparent to the community';
- Governments should accelerate the implementation of cost-reflective mass-distance-location pricing for heavy vehicles and the revenues generated should be reinvested in the maintenance of the roads consumed; and
- On routes where road freight is in direct competition with rail is required to recover its capital costs, heavy vehicles should face an additional charge on a comparable basis, where this improves the efficient allocation of freight between transport modes.

The NSW Government's recently released *NSW Commission of Audit: Interim Report* also pays attention to the disconnect that exists between prospective government infrastructure funding and community demands. The report notes that the sale of some 'brownfield' assets can assist in generating funds for reinvestment in new assets and that dynamic pricing can assist with managing asset utilization. It also states:

The pressure on the operating result to fund capital expenditure can be lessened by the disposal of assets. The [NSW] government has already taken some decisions in this direction, with proposals for long term leases of the desalination plant and the Port of Botany...

For public transport assets and other infrastructure assets subject to a pricing regime, adjustments to pricing may assist with managing peaks and troughs in demand through time linked charging. Charging a higher price during peak periods will convince commuters, who do not have to travel during peak periods, to delay their travel until a later time when the price will be lower.

*With toll roads, the charge at present reflects mainly the capital cost of the road. It would make more sense for the toll road network in Sydney to be tolled on utilisation based formulae, for example per kilometer travelled and/or differing time charges.*³⁴

The *NSW Financial Audit 2011* also underlined the important role pricing could play in managing infrastructure demand and delaying costly new investments:

*...there has been too narrow a focus (in NSW) on capital expenditure solutions and inadequate assessment of alternatives such as demand management. For example, in the transport area a major problem with rail and road is peak hour demand. Increasing capacity is very expensive and may not be effective because greater capacity can increase demand. An alternative is economic pricing that encourages users to use transport in off-peak periods or, where not possible, to contribute to the costs associated with peak hour use.*³⁵

The evidence is clear and points to the simple conclusion that 'something's got to give' in our approach to funding infrastructure. The NSW Financial Audit recommended a feasibility study for the introduction of a state-wide system of road pricing, including a base element per kilometre and a congestion charge element which varies by location and time of day.

³³ Henry, K. et al (2010)p. 92.

³⁴ NSW Commission of Audit (2012) p. 40 and 132.

³⁵ NSW Government (2011a) p. 13.

The Commission of Audit also recommended to the NSW Government that:

*... Infrastructure NSW and Treasury should investigate toll arrangements and provide options to Government on opportunities to make the toll road network more efficient.*³⁶

In February 2012, the NSW Government released a discussion paper aimed at seeking public input to the development of a NSW Long Term Transport Master Plan later in 2012. The discussion paper noted that:

*Some form of road user charging may need to be considered to manage the increase in vehicles on roads.*³⁷

A strategy for progressing a community debate is required. The recommendations from the Financial Audit and the Commission of Audit highlight the need for the NSW Government to progress this debate and the comment in the transport discussion paper perhaps suggests some preparedness to initiate this debate.

It is unlikely, though, that such a debate will be progressed without some form of input from the Australian Government. It is more likely that, if the NSW Government is to initiate such a debate, it will look for tacit if not active support from the Australian Government.

Given the importance of this debate for the entire country (progress on this matter in Australia's largest, most congested city offers some prospect of progress in other cities), if the NSW Government is prepared to initiate such a debate, it would be highly desirable for the Australian Government to support that exercise.

Such support could take a variety of forms. It could include scoping of a strategy for the community debate, communications support, assistance in implementing the strategy and development of options for airing as part of the debate.

The community debate is needed and it appears that the conditions to initiate such a debate exist.

Historical Experience in NSW with Hypothecated Charges

Some commentators have noted that the community's perceived resistance to user charges has not always been the case.³⁸ They point to the New South Wales Government's 1989 introduction of the Accelerated Road Improvement Program – commonly known as the '3 x 3 fuel levy', as evidence that well argued and targeted levies have met with community acceptance in the past. The 3 x 3 levy was a levy of 3 cents per litre of petroleum for a term of 3 years (renewable). The purpose of the levy was to generate additional funds for road upgrades, especially targeting dangerous locations.

Expenditure of the revenues from the levy was monitored by an independent committee to ensure funds were not redirected to consolidated revenue. The levy was widely understood and, it is thought, widely accepted because the levy on motoring was hypothecated to road infrastructure. Subsequently, the legislation underlying this levy was invalidated by the High Court of Australia in August 1997. The common conclusion drawn from experience with the 3 x 3 levy is that the community will accept well targeted user charges that find direct expression in the quality and quantity of infrastructure.

Based on this analysis, a potential strategy for the introduction of more widespread user charging might consist of the establishment of a dedicated infrastructure fund into which the proceeds of user charges would be allocated for the purpose of new or upgraded infrastructure assets. Revenue generated from charges that are beyond those that reflect the cost of actual consumption – such as congestion charges for example – could also be invested in new infrastructure assets.

³⁶ NSW Government (2012) *NSW Commission of Audit: Interim Report: Public Sector Management*, 24 January: p. 132.

³⁷ Transport for NSW (2012), p. 35

³⁸ Broomham (2001)

For example, revenue generated from congestion tolls on a motorway network could be invested in public transport assets. The infrastructure fund would require strong independent governance arrangements at arm's length from government. Expenditure decisions would need to be based on independent advice to allay concerns of political interference. Such an arrangement may be helpful in progressing the user charging debate.

Other Funding Options

Given the prospective constraints on government funding, options which truly raise new non-government capital need to be identified. The key alternative funding options are:

1. tolling (with the private sector taking the construction risk and, perhaps, some of the patronage risk using a 'cap and collar' arrangement);
2. connection charges to major users, e.g. a charge to be imposed on land owners/users connecting into the corridors;
3. land value capture and developer contributions;
4. the adoption of a network wide charge across the Sydney motorway network; and
5. sale of government assets and recycling of funds into new projects.

An availability charge, akin to that being used to develop the Peninsula Link in Melbourne, could also be used to fund projects in the corridor. In the absence of tolling, though, availability charges do not generate new funds; they merely defer government outlays – a relevant consideration given the longer term fiscal challenges facing future Australian and NSW Governments.

The sale or long-term lease of some existing NSW infrastructure assets could raise significant funds that could be used to invest in sensibly-scoped projects in the two corridors. Statements by the NSW Government indicate that:

- proceeds from the long-term lease of Port Botany will be directed to meeting NSW co-contributions to the upgrade of the Pacific Highway, the Princes Highway, and as seed funding for Restart NSW³⁹ (suggesting that little would be available for investment in either the M5 or F3 – M2 corridors); and
- proceeds from the sale of electricity generators would be spent on infrastructure projects, with a third of the proceeds being spent on projects in regional NSW.

Creation of a Joint Special Purpose Vehicle

A debate on road charging can and should occur in parallel with the development of options for private financing of road improvements in the M5 and F3 – M2 corridors. This is because:

- the community needs to be provided with an opportunity to consider the trade-offs between movement on the road charging front and the realistic prospects for investment in their transport networks;
- urgent action is required to provide for the development of soundly conceived and affordable projects in both corridors, i.e. projects that can still proceed on a commercial basis even if, following the community debate, governments do not proceed with road charging on a broader basis.

Whilst the community debate on road charging is best led and managed by governments, the development and procurement of commercially (privately) financed improvements in the M5 and F3 – M2 corridors (and other projects in the future) requires a dedicated entity. The establishment of a joint 'special purpose vehicle' by the Australian and NSW Governments is required.

³⁹ Baird (2011), p.13

Such a vehicle would have the overall objective of developing the motorway network (and potentially other parts of the transport network) on a more consistent and commercial basis. Amongst other things, the special purpose vehicle could:

- undertake further project development on proposals in the M5 and F3 – M2 corridors;
- receive other funding contributions from government and the private sector;
- manage other planning investigations undertaken on behalf of the two governments, including the studies recommended elsewhere in this report into land transport access to and from Port Botany and Kingsford Smith Airport;
- provide a means for incorporating existing motorway assets progressively into an overall and upgraded network; and
- enter into other joint ventures that support commercial development of the transport network.

A joint special purpose vehicle would also provide the mechanism for suitably scoped projects in other corridors. The special purpose vehicle could be structured to deal with proposals in other forms, including the collection and use of other funding contributions.

Assessment of Funding Options

Tolling is an option, perhaps more so for the M5 East than for the F3 - M2. A combination of:

- a tight freight-focused project;
- the imposition of significant truck tolls (reflecting both the cost of providing the project and the time and productivity savings associated with a dedicated freight route); and
- other measures (such as winding back the NSW Government's M5 'Cashback' programme)

may be able to fund a reasonable proportion of the cost of such a project. It is unclear, though, whether tolls alone could fund all of the cost of such a project.

Availability charges are likely to be an attractive option to parties in the private infrastructure sector. The market place is familiar with such financing structures for transport projects and social infrastructure. Using availability charges to support funding for these projects is likely to place significant ongoing demands on future government budgets, especially if the model is used widely. This would be particularly the case for the previous F3 - M2 project.

Single point connection charges are unlikely to be capable of raising substantial funds for investment in these projects. Perhaps the only location where the prospective volume of traffic might warrant consideration of such a charge is at Sydney Airport.

A per kilometre charge applied across the entire Sydney motorway network (and perhaps some (presently not significant arterial roads) is the most attractive economic means of funding prudently scoped projects in both corridors. Charges would need to be imposed on all motorways including those that are presently privately operated. This would require renegotiation of the existing motorway concessions.

In addition, the charge would apply to sections of the motorway network that are presently untolled. The existing tolling regime on Sydney's motorway network is fragmented and fails to support effective transport investment. Appendix 3 shows the tolling arrangements on Sydney's motorway network.

There are significant contractual, policy and project-specific issues to be considered with this option. Nevertheless, it appears to be the only plausible option that is genuinely capable of providing a significant pool of new funds for investment in these (and other) projects. A fund supported by a network charge could be used to invest in road projects and public transport projects, whether incorporated as part of the motorway upgrades or as projects in their own right. Initial modeling suggests that a charge of 35c per kilometre for cars and \$1.05 per kilometre for commercial vehicles could fund a portfolio of projects valued at potentially between \$20 – 30 billion over the next 15 – 20 years.

Concerns may be raised about the implications of such an approach for government balance sheets. Provided the projects are tightly scoped and patronage is well understood, and provided projects are appropriately prioritized and phased, this issue is capable of being managed.

Governance structures would need to be put in place to ensure that, once loans are taken out to fund new projects, the per kilometre charge does not become a 'political football' that is subject to arbitrary change. To achieve this objective, it is envisaged that the special purpose vehicle proposed earlier in this report would be established as a corporatized entity. It would operate on a commercial footing, albeit within parameters set by the NSW and Australian Governments.

In addition to funding the development of the networks themselves, a network charge could also be used to manage transport demand. In time, arrangements could be established so that the charges could be varied on a time of day basis to manage congestion, or by location (e.g. lowering the charge along less congested sections of the network and raising them in more congested sections of the network).

Issues Bearing on Taking Projects in the Corridors to Market

Several issues affect the pace at which projects in these two corridors can be 'brought to market', whatever form the projects may take. These issues are described below. Ultimately, though, in the current project finance market, and regardless of the project to be developed, the issues tend to resolve around two broad questions:

- the extent to which governments wish to commit public funds in the short-term (or over the longer-term) towards the project in question; and
- the degree of uncertainty and risk associated with the project at the point of contract signing, and the respective share of those risks borne by the relevant private parties and the governments (recognising that, in some cases, the scale and/or nature of the projects may require both the Australian and NSW Governments to commit funds).

Ensuring that the risks and costs to governments are understood is likely to lead to lower costs. Governments need to have a clear understanding of what it is they are 'buying' and why. Further comment on the more detailed issues which underpin these observations is set below.

Demand Risk

Private financing options for initiatives in both corridors will be affected by a range of considerations bearing on prospective demand for transport in the corridors. Some of these matters will be influenced by government decisions, whilst others will be affected by wider national and even global factors. Recent reports have dealt with the difficulties associated with the forecasting of patronage on motorway projects.⁴⁰

Governments will have a significant degree of influence and control on critical factors such as:

- a decision about the future role of Port Botany and how land transport of freight to/from the port is to be handled;
- related to the Port Botany decision (and decisions about inter-state freight), decisions as to whether an intermodal terminal will be developed at Moorebank;
- a decision about a second Sydney airport and/or high speed rail link; and
- a decision about the timing and scope of any future orbital corridor (multi-modal or otherwise) around Sydney.

The scale of the potential investments in both corridors suggests that the concession period for privately-financed infrastructure will extend over a long-period. The concession periods will extend probably over a period where governments will need to consider whether to proceed with other investments, e.g. a second Sydney airport or high speed rail. This will bear on the demand (and therefore fundability) of projects that might be pursued in the shorter term.

For example, decisions about a second Sydney airport (or timing and scope of an orbital corridor) are likely to have a significant impact on potential projects in the F3 – M2 corridor, and the terms on which the private sector might invest in those projects.⁴¹ Decisions about an intermodal terminal and/or the

⁴⁰ For example, the Department of Infrastructure and Transport is seeking submissions in response to a consultation paper on the matter. See Australian Department of Infrastructure and Transport (2012)

⁴¹ The *Joint Study on Aviation Capacity in the Sydney Region* - see Sydney Region Aviation Study Steering Committee (2012) - was released in early March 2012. The report presents 20 recommendations about short and medium term steps to provide sufficient aviation capacity to serve Sydney in the short and long-term. The recommendations are wide-ranging and require closer consideration and review. An initial review of the report suggests that some issues, e.g. options for land transport to/from Kingsford Smith Airport, leave some issues unaddressed and, more generally, are open to debate.

Infrastructure Australia understands that the final report of the study into high speed rail is due to be completed by December 2012.

development of a potential M4 East motorway (or variant on that proposal) will affect investor interest in proposals for the M5 corridor.

What this reflects is the absence of comprehensive and agreed long-term plans for Sydney and the wider conurbation. The absence of those plans, including some sense of sequencing of projects to meet projected demand, is likely to have a material impact on the ability of governments to bring projects to market in the short-term.

State of Project Development and Planning Approvals

More innovative and competitive project and financing options are likely if governments are clear about:

- the service specification they are looking to achieve; and/or
- the scope of the projects they wish to have delivered.

As suggested earlier in this report, there is a strong case for not proceeding with the previous motorway proposals. New projects will need to be conceived and scoped. This requires:

- development of a clear project service specification;
- updated demand studies;
- further concept engineering design (and value engineering to understand where design and service level trade-offs might lie), especially for the F3 – M2 motorway;
- geotechnical studies (to improve the understanding of governments and the private sector of the environment in which the project is to be developed);
- development of a public sector comparator, including cost estimates; and
- an ‘accelerated process’ for securing planning and environmental approvals under the NSW *Environmental Planning and Assessment Act* and the Commonwealth *Environmental Protection and Biodiversity Conservation Act*.

It is common now to start procurement processes whilst the environmental assessment processes for a project are underway (usually when the environmental impact statement is either well-developed or on public exhibition). Equally, in order to minimise risks for both government and the private sector, it is the norm not to finalise any procurement processes (including negotiation of final contracts) until the main planning and environmental approvals have been issued.

Commercial Preparedness of Governments

As with any large infrastructure project, whether procured on a ‘conventional’ basis such as with a design and construct contract or otherwise, governments need to understand what it is they are looking to procure when they enter arrangements for a privately financed infrastructure project.

The nature of private financing arrangements is often that there is a greater need to understand what is being ‘bought’ and on what terms. The trade-offs and/or ‘optional extras’ and their costs need to be understood.

Neither the Australian nor the NSW Government is well-positioned in this regard. Governments can only be well-positioned, if they have undertaken a reasonable body of project development work, which, as noted above, has not been the case in either corridor, especially the F3 – M2 corridor.

There does not appear to have been any attempt to prepare detailed and current patronage models for the existing motorway proposals that have regard to:

- different scenarios, including whether or not the limit on container throughput at Port Botany is increased;
- alternate views about the market being served; and

- demand elasticities at various service/price (tolling) levels.

This is fundamental, particularly in the Sydney context, where Transurban has a very detailed understanding of the travel market.

Governments also need to have a reasonable understanding of the construction issues and risks associated with projects they are contracting to have delivered. Experience with projects such as the Airport Link motorway in Brisbane suggests that, even where contracts are entered into seemingly to transfer all or most construction risk to the private sector, events can arise where cost overruns occur and governments are left facing the possibility of large legal claims.⁴²

The NSW Government is perhaps in a stronger position than the Australian Government. It is both owner of many of the network assets and project proponent for the two previous motorway proposals. In addition, it possesses a range of institutional and individual experience to call upon. The NSW Government is therefore likely to have a deeper understanding of the projects and their attendant opportunities and risks.

In the past, the Australian Government has been of the view that it can 'cap' its financial exposure on projects by placing a ceiling on any Australian Government contribution to a project. Experience with several projects, most notably the Ipswich Motorway, suggests that this does not prevent project proponents from seeking additional funding from the Australian Government.

Several of the funding options (particularly the use of availability charges) may ultimately entail some form of on-going commitment from the Australian Government. The Australian Government will need to ensure that its understanding of the projects is commensurate with the scale of the projects and the nature of the financing arrangements.

Resolution of Quantum and Sharing of Government Contributions

Securing an agreement between the Australian and NSW Governments on project funding (and potentially on other commercial issues) will bear on the speed with which projects can be brought to market. Most funding options (with the possible exception of the network charge) will require some form of government contribution.

That being the case, the quantum and principles for sharing any public sector contribution will need to be agreed between the two governments (at least broadly) before the projects in the two corridors could be taken to market. The private sector is likely to respond poorly to any expression of interest and tender process that leaves such a commercially vital consideration unclear.

The NSW Government is almost certain to look to ensure that any government contribution to a public private partnership in the corridors is one that is jointly made with the Australian Government. This is because of:

- the scale of most project options (most options in both corridors involve multi-billion dollar outlays);
- competing demands on the NSW Government's budget, both within the transport sector and in other sectors; and/or
- some funding options, particularly a network charge, require the conviction to introduce and sell new policy. The NSW Government may look to the Australian Government to commit to some form of funding in return for sharing the challenge of introducing new policy.

⁴² See MacDonald, R. (2011) which notes that Leighton Holdings is considering a multi-million dollar lawsuit against Brisbane City Council and possibly the Queensland Government to recover losses it as incurred on the Airport Link project.

Probity and Value for Money Considerations

The fact that much of Sydney's existing motorway network is already operated by private concessions raises a question as to how government(s) should negotiate with those parties.

The issue is most relevant to the network charging option. Any move to a network charge will bear on those concessions and the concession holders will look to be kept 'financially whole'. Arrangements would need to be put in place that balance the need for:

- commercial confidentiality; and
- some degree of transparency and independent review

in order to satisfy reasonable expectations that any final agreement is both fair to the concession holders but also represents value for money.

There have been suggestions that Transurban may present an unsolicited proposal to the NSW Government to develop several motorway links. In this regard, the following extract from the NSW section of the *National Public Private Partnership Guidelines* is relevant:

*While unsolicited proposals can provide innovative ideas about improving delivery of government services, they must demonstrate an overall community benefit and be consistent with the Government's plans and priorities.... The Government will normally test unsolicited proposals in the market place through competitive tendering.... Requests to bypass the competitive tendering process ... will only be granted where the proponent can show there would be no viable competition for the delivery of the proposal's essential outcomes.*⁴³

Resolving the Matters Above

The 'special purpose vehicle' proposed earlier in this report would be best placed to take responsibility for further project development of proposals in the two corridors involving:

- high value vehicle links
- bus transport improvements, including:
 - bus priority measures on existing motorways and other roads, including roads in:
 - western and south-western Sydney;
 - northern Sydney (i.e. centres from Hornsby through to the lower north shore); and
 - other corridors such as the northern beaches/Military Road corridor;
 - bus-priority traffic lights and lanes at intersections;
 - complementary development of new 'parking stations' around parts of the motorway network, starting with the F3 on the Central Coast;
 - purchase of a new fleet of buses to provide high frequency services between the parking stations and a range of destinations (particularly destinations not well served by rail);

Such a vehicle might be required to consider government policy decisions or decisions in relation to truly strategic matters such as decisions about a second Sydney Airport. Nevertheless, compared to conventional government agencies, a special purpose vehicle can be expected to bring a greater degree of commercial focus to the project development, i.e. it will be more likely to focus on what can plausibly be funded through user charges on trucks, commercial vehicles and buses and other commercial revenue streams.

⁴³ Infrastructure Australia (2011b), Volume 6, pp.12-13

Conclusions and Recommendations

In the short term, concluding a private sector financing for projects in either or both corridors will not be straightforward. In order to bring projects in the two corridors to market as soon as possible, focussed work is required by both the Australian and NSW Governments.

Most importantly, the two governments need to agree on a strategy for managing prospective freight and passenger demand across Sydney. This is especially the case in relation to freight.

The NSW Government has recently authorised Infrastructure NSW to commence work aimed at setting that strategic direction for the transport needs of Port Botany and Kingsford Smith Airport. Importantly, the NSW Government's November 2011 submission to Infrastructure Australia recognised the need for a holistic plan to service the land transport needs of Port Botany and Kingsford Smith Airport.⁴⁴

The opportunity presented by this development should be grasped by the Australian Government.

This work needs to be progressed quickly, especially if the results of that work are to complement the Australian Government's investigations of the Moorebank intermodal terminal (it is understood this work has now been finalised).

The conclusions from this joint strategic work then need to shape focussed and well-resourced project development on specific investment and funding proposals in both corridors. The Office of the Infrastructure Coordinator believes that the most appropriate project/funding package is likely to involve:

- the development of 'high value vehicle links in both corridors, complemented by the development of the Moorebank intermodal terminal;
- project funding drawing upon tolls on the high value vehicles, probably in conjunction with some form of network wide charging on Sydney's motorway network.

Other key conclusions include:

- further project development of preferred project concepts is essential. As noted in the *National PPP Policy and Guidelines*, planning, project development and specification of service objectives are critical elements in the successful delivery of Public Private Partnerships;
- building on experience with the development of the *National Land Freight Strategy* discussion paper, governments and potential private sector project sponsors need to engage and work with the freight sector (and their customers) in working up a project financing and funding package;
- by sharing patronage risk with the private sector through so-called 'cap and collar' arrangements, governments could minimise (perhaps to a modest degree) any reliance on availability charges; and
- if governments are inclined to proceed with motorways in one or both corridors, market sounding should be undertaken early in order to be satisfied that the markets can finance projects that will almost certainly require a larger financing than the current market capability of \$5 billion.

Particular attention will need to be paid to the order in which issues are decided to maximise the value of reform and investment. As noted above, the NSW Government's timeline for concluding a long-term lease of Port Botany (by mid-2013) places a premium on getting the strategic settings 'right'.

⁴⁴ See NSW Government (2011), specifically the tab titled *Port Botany and Sydney Airport Transport Improvement Plan Submission to Infrastructure Australia*, which at p.53 proposed a jointly funded, four phase process to develop a Plan over the period 2012-13 to 2014-15. The submission proposes that the first three phases of work (described as planning, delivery strategy and funding) be completed over 18 months (i.e. by mid 2013 from the November 2011 submission date), with the fourth phase (EIS and planning approvals for preferred infrastructure options) to be completed over the following 18 months.

Prior to any lease being decided, it will be necessary to determine:

- the 'cap' on the throughput of containers at Port Botany and the associated environmental approvals process;
- the role of the Moorebank intermodal terminal and its strategic value in supporting growth in the capacity of Port Botany; and
- the future of the M5 Motorway, as it will have an important economic as well as a financial bearing on the value of the port lease.

It is recommended:

1. The Australian and NSW Governments resolve outstanding issues associated with the development of the Moorebank intermodal terminal, and commit to the development of the Moorebank intermodal terminal (with an agreed split of funding, delivery responsibilities and development timetable) in their respective 2012-13 budgets.
2. The Australian Government approach the NSW Government with a proposal to establish a joint 'special purpose vehicle' to facilitate commercially-based development of Sydney's transport network (including private sector investment), and for the special purpose vehicle to:
 - a. oversee project development and procurement of new transport infrastructure in Sydney on a commercial basis, i.e. using user charging to the maximum extent possible;
 - b. manage studies of other additions to Sydney's major transport networks, particularly those that can reasonably be developed on a commercial basis.
3. The special purpose vehicle focus initially on:
 - a. project development and procurement of high value vehicle links in the M5 and F3 - M2 corridors that can be funded largely if not wholly through user charges on commercial vehicles, and associated bus transport improvements, noting:
 - the associated bus transport improvements would include:
 - bus priority measures on existing motorways and other roads, including roads in:
 - western and south-western Sydney;
 - northern Sydney (i.e. centres from Hornsby through to the lower north shore); and
 - other corridors such as the northern beaches/Military Road corridor;
 - bus-priority traffic lights and lanes at intersections;
 - complementary development of new 'parking stations' around parts of the motorway network, starting with the F3 on the Central Coast;
 - purchase of a new fleet of buses to provide high frequency services between the parking stations and a range of destinations (particularly destinations not well served by rail);
 - the limited project development on previous proposals for upgrades in the M5 and F3 – M2 corridors;
 - financial close on any private financing would normally occur after the completion of environmental impact assessment processes;

- b. investigations into:
 - options for future land transport links to/from Port Botany and Kingsford Smith Airport, i.e. beyond development of the Moorebank intermodal terminal and a high vehicle link in the M5 corridor.
 - options for multi-modal (and potentially multi-sectoral) links for the Sydney-Newcastle-Wollongong conurbation that build upon the conclusions from:
 - responses from the two governments to the *Joint Study on Aviation Capacity in the Sydney Region*; and
 - the final report on investigations into a potential high speed rail link.
 - c. contributing to any broader community debate on road charging as a means of funding new transport improvements and managing transport demand in Sydney.
4. The Australian and NSW Governments commit funding in their respective 2012-13 and 2013-14 budgets for the investigations and studies identified in recommendation 3(b) above.
 5. The NSW Government be encouraged to review the timing of the leasing process for Port Botany, both to:
 - a. enable input from the integrated land transport planning proposed by the NSW Government to inform the leasing process; and
 - b. increase the likelihood that a long-term lease will maximise proceeds for the NSW Government and strategic outcomes for both governments.
 6. The Australian Government note the lead being shown by the NSW Government in identifying the need for governments and the community to debate the arguments for and against road charging as a means of:
 - a. funding future upgrades to Sydney's transport network; and
 - b. managing transport demand.
 7. The NSW Government be encouraged to lead that debate (with active input from the Australian Government), including:
 - a. development of a strategy (with input from Infrastructure NSW and Infrastructure Australia as required) for leading and managing that debate; and
 - b. development of proposals, including options for network charging, that can be considered by the community as part of that debate.

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Appendix 1 – Outline of the Previous M5 East and F3 – M2 Proposals

M5 East Motorway

The previous motorway proposal from the NSW Government sought to duplicate a 7.5 kilometre section of the existing M5 between King Georges Road, Beverly Hills and Marsh Street, Arncliffe. This would involve duplication of the existing four kilometre four lane tunnel, and incorporation of an additional four lanes into the present 3.5 kilometre surface section between King Georges Road and the western tunnel portal at Bexley. In addition, the proposal involved a new five kilometre (mainly) four lane road on the surface from Marsh Street, Arncliffe around the western side of Kingsford Smith Airport to Canal Road, Sydenham. A map of the proposal is appended at the end of this summary.

In August 2010, the NSW Government asked the Roads and Traffic Authority (now Roads and Maritime Services) to look at alternative corridor options for the proposed four lane arterial road from the M5 East tunnels to minimise the impact to the Tempe area. The alternatives are aimed improving the links from the M5 to the Sydney Airport and Port Botany areas without building a road through Tempe Reserve.⁴⁵

Although not insignificant work has been undertaken on the M5 East proposal, the project is at a relatively early stage of development. The NSW Government's estimated cost (\$4.5 billion in real \$2010) is likely to be understated. The NSW Government argued that the project has a benefit cost ratio (BCR) of 1.67:1. The BCR is likely to be overstated. Whilst previous NSW Government submissions were not specific about the level of funding sought from the Australian Government, it appears that a contribution of the order of 75% of the capital cost was in the government's mind.

Although not part of the M5 East, from an overall M5 corridor perspective, the NSW Government's intentions for the M5 corridor also include a widening of the western section of the M5 from four to six lanes between King Georges Road, Beverly Hills and Camden Valley Way, Prestons. A map of the proposal is also appended at the end of this summary.

The sub-section of the M5 between Moorebank Avenue and the Hume Highway at Liverpool (close to the proposed Moorebank Intermodal Terminal) is not to be widened as part of the proposal.

Planning approval for the M5 West widening proposal was given by the NSW Minister for Planning and Infrastructure on 9 November 2011.

The proposal to widen the western section of the existing motorway from four to six lanes has been under negotiation between the NSW Government and the concession holder for this western section of the motorway (Interlink Roads) since late 2009. The NSW Government announced on 21 December 2011 that it had reached an 'in-principle' agreement with Interlink Roads to widen the M5 West.

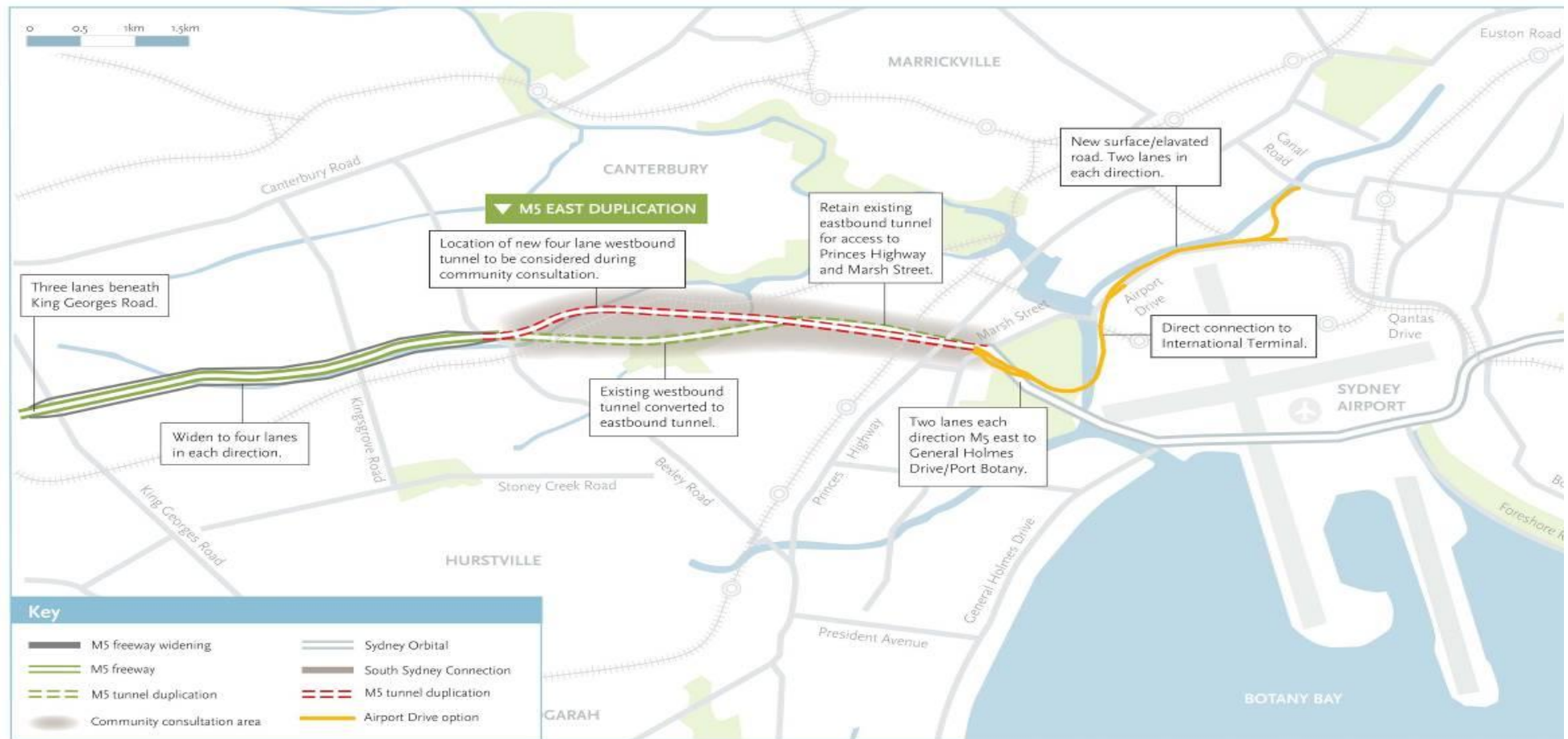
F3 - M2 Motorway

The proposed F3 - M2 project aims to provide an eight kilometre motorway standard road from the intersection of the Pacific Highway and Pennant Hills Road at Wahroonga in northern Sydney, broadly under Pennant Hills Road, to its intersection with the M2 motorway. A map of the proposed route is appended at the end of this summary.

The previous proposal suggested that the project could be developed as a four lane tunnel (if tolled) or six lane tunnel (if the road was untolled). The NSW Government's estimate of the project costs was \$4.14 billion in real \$2008 (four lane option) and \$4.75 billion in real \$2008 (for the six lane option). The BCR for the project stands at somewhere between 0.57 and 0.74:1. In other words, the current proposal would destroy economic value.

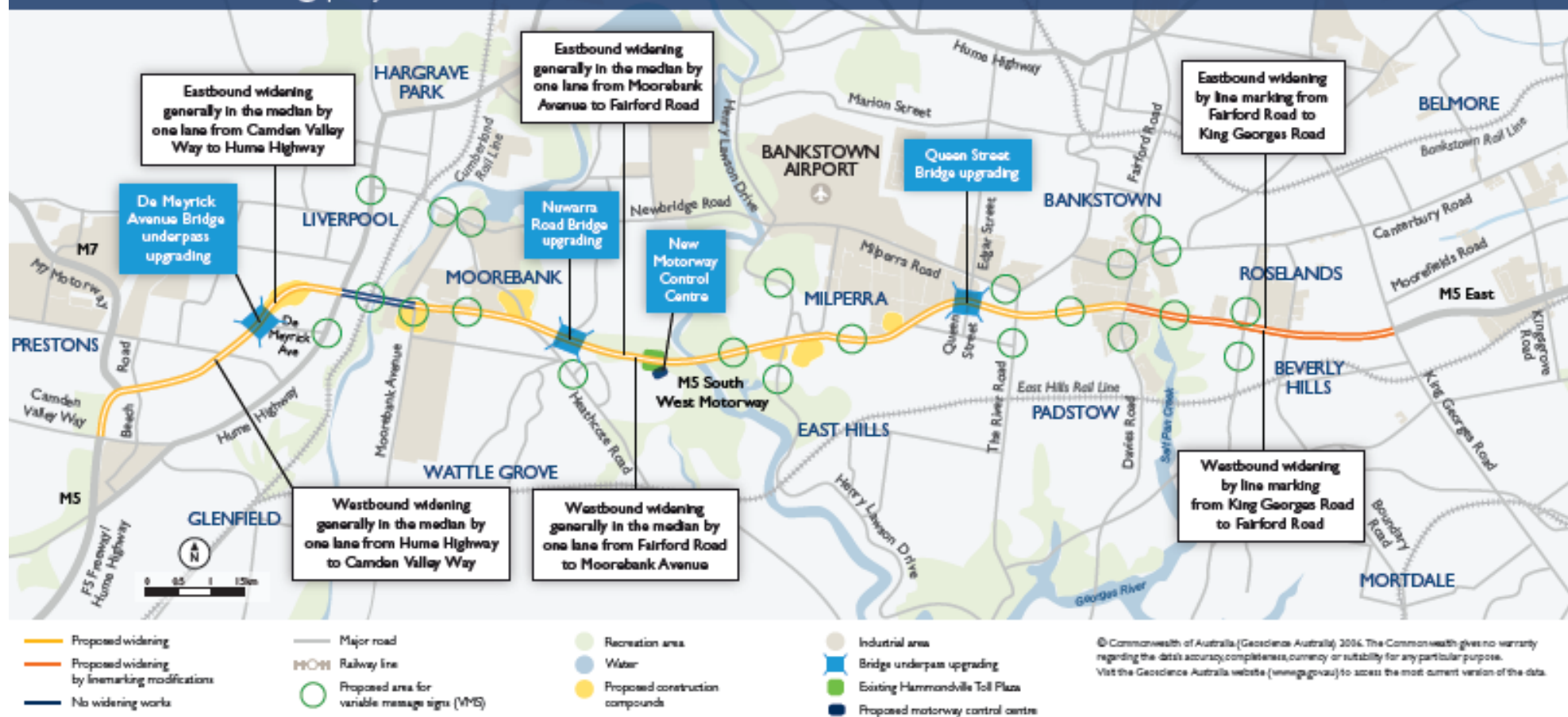
⁴⁵ NSW Transport – Road and Maritime Services (2011)

NSW Government Preferred ('New Indicative') Configuration for the M5 East



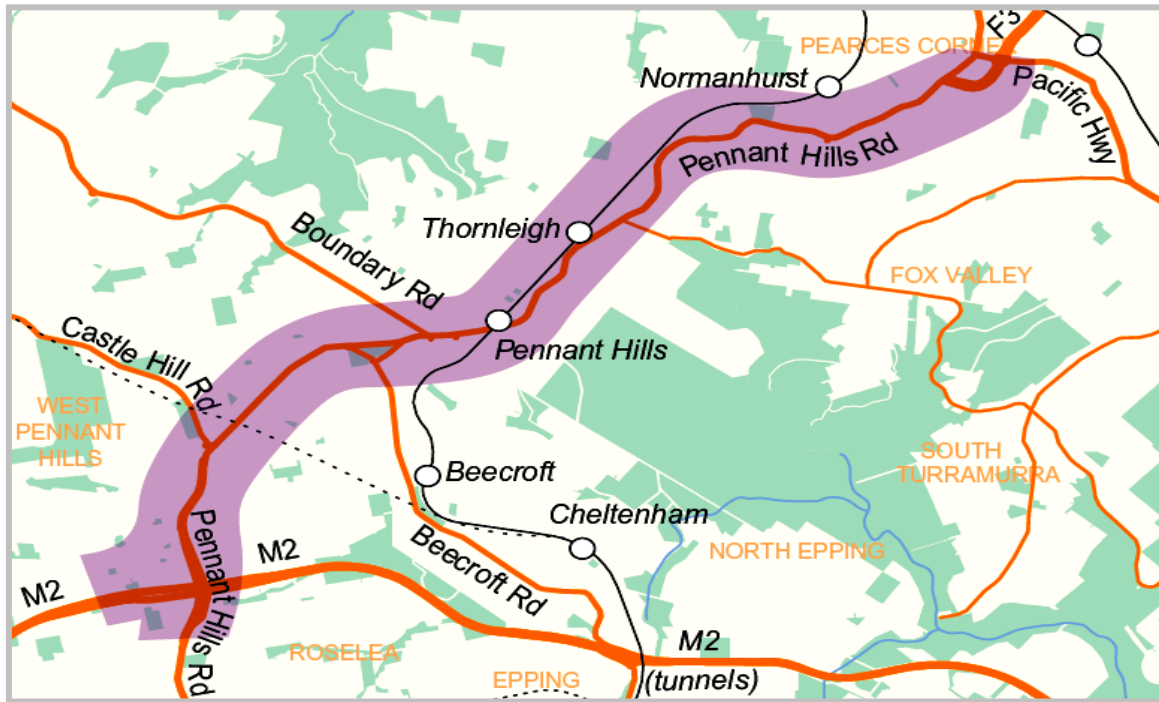
Source: NSW Transport (2010)

M5 West widening project overview



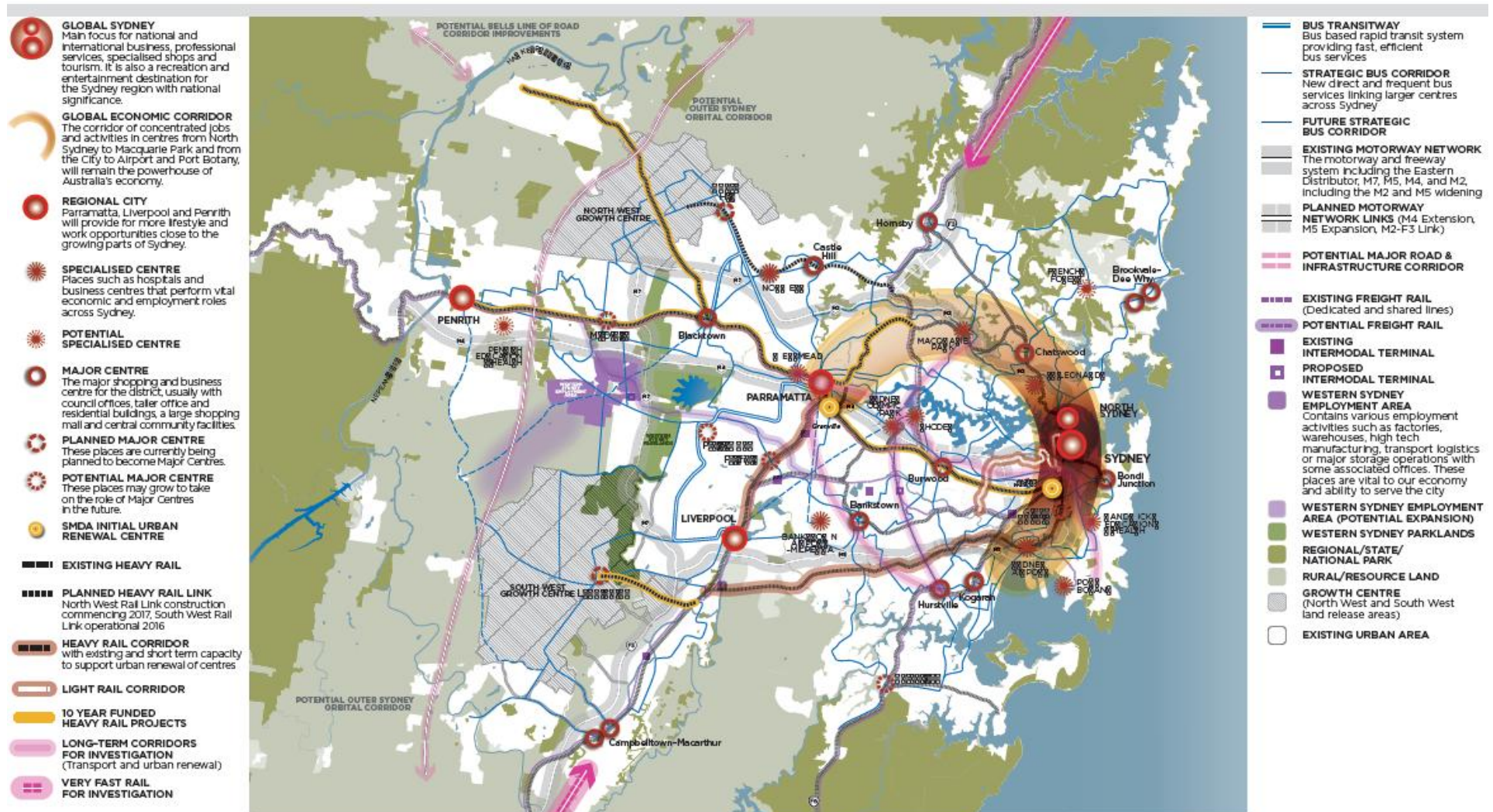
Source: NSW Transport – Roads and Maritime Services (2011a)

Current Conceptual Route of the F3 - M2



Source: NSW Transport (2010)

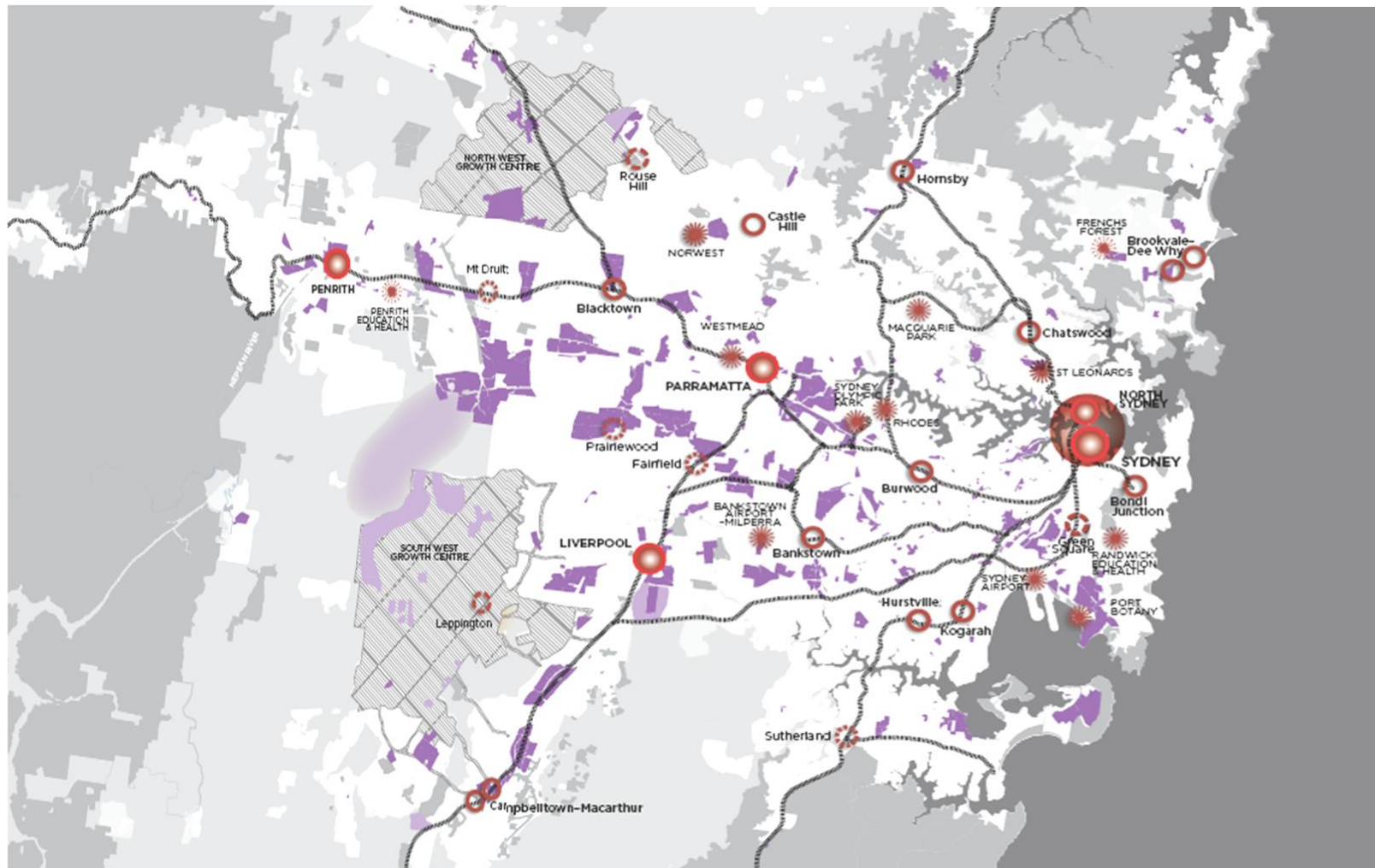
Appendix 2 – Metropolitan Plan for Sydney 2036



Source: NSW Department of Planning (2010)

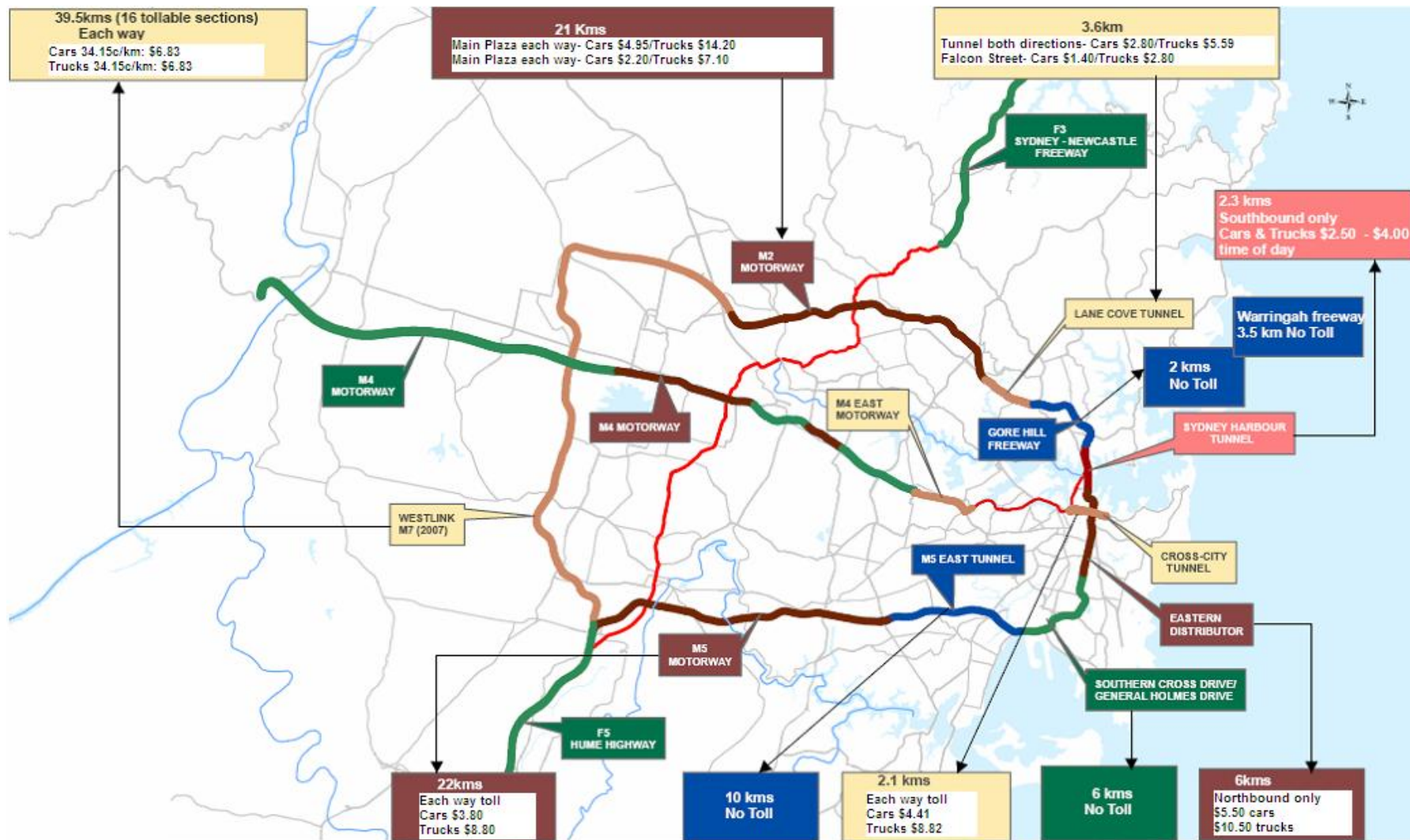
Employment Lands in the Metropolitan Plan for Sydney 2036

FIGURE E2
EMPLOYMENT LANDS



Source: NSW Department of Planning (2010), pp. 142-143

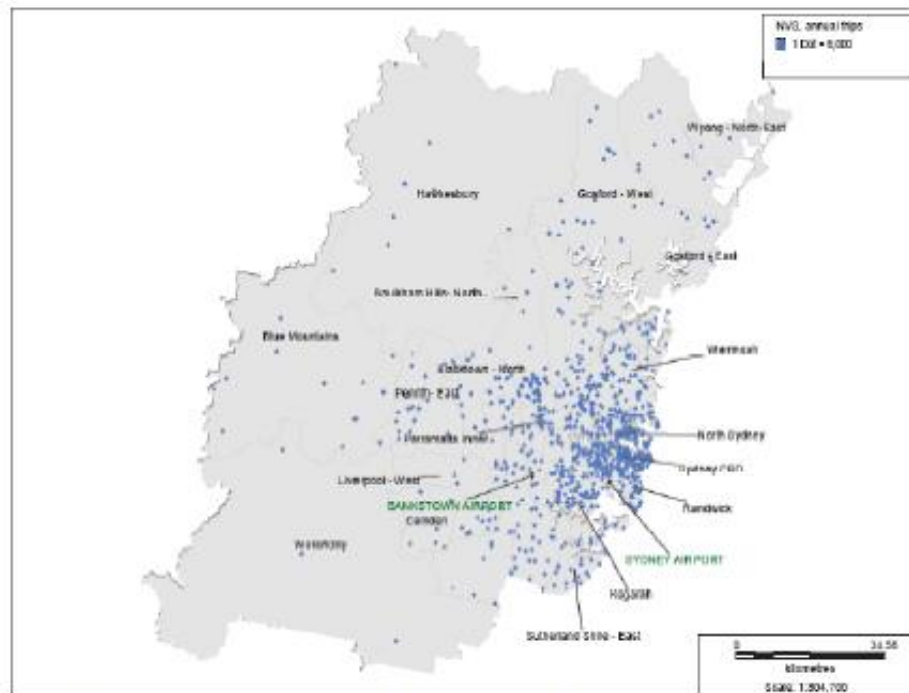
Appendix 3 – Sydney Motorway Tolling Arrangements (mid 2010)



Source: Roads and Traffic Authority

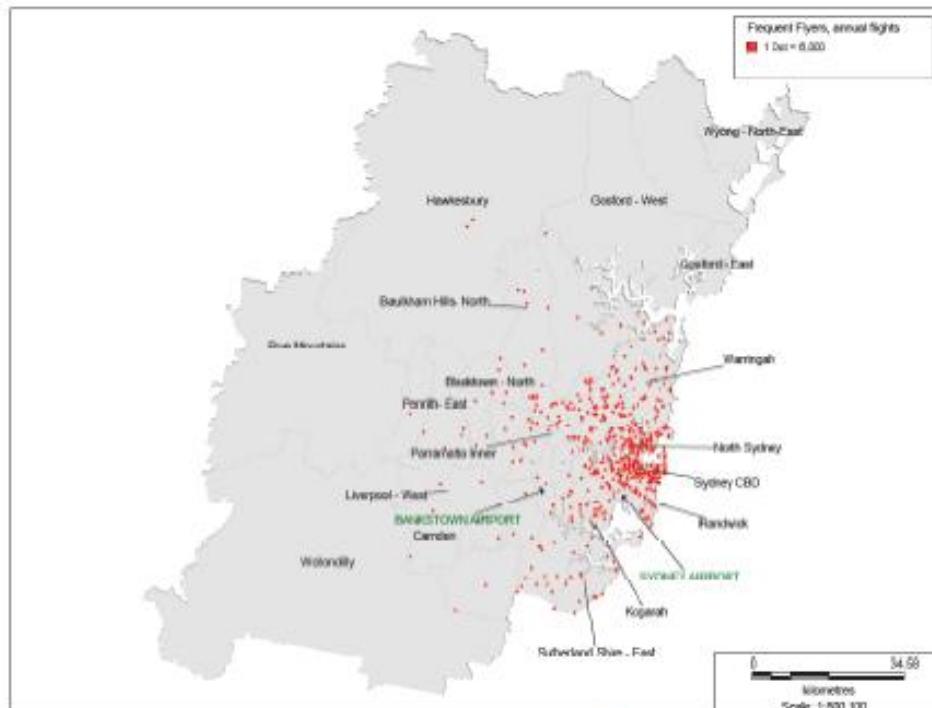
Appendix 4 – Pattern of Air Trips by Residents in Sydney Region

Air Trips by Statistical Local Area of Residence, Sydney



Source: BITRE analysis of NVS, 2005-2009 pooled data (Tourism Research Australia), converted to annual trips.

Flights by Statistical Local Area of Residence, Sydney



Source: BITRE analysis of major airlines Frequent Flyer datasets. SLAs with fewer than 6000 flights do not receive a dot.

Source for both figures: Bureau of Infrastructure, Transport and Regional Economics (2012), p.22