



Australian Government
Infrastructure Australia



National Land Freight Strategy
Discussion Paper
February 2011



CONTENTS

1. INTRODUCTION	2
2. SUMMARY.....	3
3. BACKGROUND: THE AUSTRALIAN FREIGHT INDUSTRY	8
4. CONSTRAINTS AND CHALLENGES.....	19
5. FREIGHT POLICIES.....	28
6. CASE FOR A NATIONAL LAND FREIGHT NETWORK STRATEGY.....	37
7. THE CONCEPTS UNDERPINNING A NATIONAL LAND FREIGHT NETWORK STRATEGY.....	44
8. NATIONAL LAND FREIGHT NETWORK STRATEGY OUTLINE	51
9. NEXT STEPS	57
APPENDIX 1: PRIORITIES AND ACTIONS	58
<i>Priority Area 1: Identifying a national land freight network.....</i>	<i>58</i>
<i>Priority Area 2: Completing a strategy</i>	<i>61</i>
<i>Priority Area 3: Ensuring plans can be executed</i>	<i>64</i>
<i>Priority Area 4: Freight infrastructure improvement and access</i>	<i>65</i>
<i>Priority Area 5: Governance.....</i>	<i>67</i>
REFERENCES:.....	70

1. Introduction

Infrastructure Australia is a statutory body which advises governments, investors and infrastructure owners on a wide range of issues. These include Australia's future infrastructure needs; mechanisms for financing infrastructure investments; policy, pricing and regulation. Infrastructure Australia also advises on frameworks for the efficient operation and delivery of infrastructure.

Productivity and competitiveness are vital goals for all countries. Infrastructure Australia takes the view that there is considerable scope for improving Australia's productivity and international competitiveness through national thematic approaches to the provision and use of infrastructure. One of the national themes identified by Infrastructure Australia is a national land freight network strategy:

*'Rail and road freight infrastructure planning and investment can no longer be undertaken in isolation from each other, or worse, in competition with each other.
'A new national freight strategy needs to be developed for our freight networks to improve planning, investment and decision making'.¹*

Traditionally, policy has been segmented by mode; for example, by road, rail, aviation and shipping, and by jurisdiction. The idea of a national freight network is relatively new, although some jurisdictions have progressed consideration of state freight networks.

Infrastructure Australia is seeking comments on its preliminary views about a national land freight network strategy, including on goals, objectives, strategic directions and priorities.

This discussion paper provides a case and priorities for a national land freight network strategy, and an indicative list of projects and programs that Infrastructure Australia has already flagged for inclusion in a long term national land freight network plan.

¹ <http://www.infrastructureaustralia.gov.au/publications.aspx>

2. Summary

Productivity and competitiveness, which are vital to meet the challenges of the future, are inhibited by constraints to freight.

These constraints include a lack of planning for freight activities, a lack of clarity about the capacity for growth, and poor interoperability across infrastructure networks, all of which lead to congestion, low reliability and unexploited opportunities for investment.

The identification of a tightly defined national land freight network, including sea ports and airports, would start to address thematic issues such as best use of infrastructure; integration of freight and land use planning; capacity for growth, and responsiveness of infrastructure to demand. It would also facilitate scenario testing and forecasting.

Tangible, long term goals for a national land freight network are:

- improved economic, social and safety outcomes
- high productivity vehicle capability and access
- modern operating procedures and application of smart technologies
- appropriate separation of personal transport and freight
- infrastructure and operational performance indicators.

Any strategy needs to consider routes, precincts and terminals that serve the major cities. A strategy that includes long term planning for infrastructure capacity is also more likely to engage stakeholders and promote private investment. Similarly, the creation of a road improvement regime facilitates investments by the freight industry and its customers.

The publication of a map or other document, showing interoperability requirements and seamless access for the future efficient use of the network, could be commenced relatively early. By including publication of likely major freight routes and precincts, with reference to relevant jurisdictional planning documents, better integration of freight transport and land use planning would be promoted.

Easing any unjustified limits to the interoperable access of high productivity vehicles would have an immediate productivity pay-off, reduce the number of vehicle movements, and have positive impacts on energy consumption, emissions and overall amenity.

Two significant questions about such a national land freight network strategy are: *How would interfaces be dealt with?* and *What should happen in the interim, before such a network is established?*

Interfaces need to be carefully addressed, but should not undermine or delay the provision of a network. While interfaces can give rise to complex issues, there has been some success in dealing with them in other national networks including in transport.

Consideration and development of a national land freight network should not delay worthwhile investment and reform proposals. Hence while it is in development, Infrastructure Australia will continue to seek and consider worthwhile freight infrastructure project proposals that add to national productivity. Infrastructure Australia also strongly supports speedy implementation of the national reforms already agreed, particularly the seamless national economy agenda, the establishment of a heavy vehicle regulator and a national rail safety regulator.

To focus discussions, the following map shows a single new national network to reflect an emphasis on potential future freight flows, vehicle connectivity, ports and settlements. It includes:

- ports such as Port Kembla, Portland, Abbot Point, Bell Bay and Dampier, and prospective ports such as Oakajee and Hastings
- major airports and some regional airports with important freight tasks such as Rockhampton, Port Hedland and Townsville
- intermodal terminal/freight cluster sites in the capital cities, Gold Coast and Canberra
- rail lines towards the Pilbara and the inland rail route Melbourne-Brisbane/Gladstone
- roads to ports, airport and intermodal terminal / freight cluster sites
- completion of urban motorway networks to freight specifications / priority.

An indicative long term infrastructure program for this network, as distinct from projects that just deal with capacity constraints via government funding would be developed. Infrastructure Australia is not recommending that construction of all these matters needs to be done, least of all done now or with funds collected from general taxation; rather it points to these ideas as being the type of long term programs that could underpin a national network, if volumes of networked freight are sufficiently high.

The network would aim at interoperability by including specifications for rail, roads, communications, corridors and shipping. These factors imply a long term direction towards:

- availability of a standard gauge freight priority rail line from principal freight nodes to the designated interstate network
- standard gauge rail tracks/freight priority routings in capital cities, Inland Rail Route, further rail standardisation in Queensland, Victoria and Western Australia
- single rail control system or seamless interface with city train control systems
- identification of opportunities to use smart technology in infrastructure and operations
- greater intermodal terminal capacity in the capital cities, in major cities and strategic interchange points
- high productivity/performance based standards road network for certain 'national' highways, Goulburn Valley - Newell, Hume – Pacific - Bruce etc, town by-passes and grade easing

- introduction of dedicated road freight infrastructure where traffic density permits, between capital city ports and intermodal terminal/freight cluster sites
- a second tier of freight roads from jurisdiction designated strategic freight clusters to the national network.

Infrastructure Australia has already identified national land freight network projects that are ready to proceed and that could be an ideal start to these programs. These include Adelaide rail freight (Goodwood and Torrens junctions), Majura Parkway, and the Pacific Highway. Other projects that need to be progressed to 'ready to proceed' status include the Western Interstate Freight Terminal, north south freight corridors and Green Triangle in Victoria/South Australia. The Moorebank terminal in Sydney also is a key project.

The options under consideration by the Infrastructure Australia have a limited focus, and it is important to deal with other issues, including distributed urban freight; low density rural infrastructure and connectivity of major freight generators to the national network. While these may primarily involve local or regional issues, given the importance of freight to national productivity, there is a strong case for a nationally consistent approach to each.

Next steps

While many organisations have an important stakeholding in relation to freight, any approach to implementation of a national land freight network needs the cooperation of jurisdictions.

Infrastructure Australia will consider comments on this discussion paper prior to formulating advice for governments.

In the interim, Infrastructure Australia intends to:

1. commence the national land freight network by seeking the support of industry, the Commonwealth and jurisdictions for:
 - removing the impediments to high productivity vehicle use
 - development of long term agreed freight projections based on a range of scenarios, and the tracking of these scenarios and projections
 - identification of freight capacity constraints that may emerge under these projections
 - advancing the projects in Infrastructure Australia's pipeline to 'ready to proceed' status, and provide appropriate recommendations regarding these
 - progressing the matters identified as an initial program into projects for consideration in Infrastructure Australia's pipeline
 - development and reporting of performance indicators for monopoly infrastructure.
2. seek the support of the Commonwealth and the jurisdictions for the development and publication by jurisdictions of their own freight plans.
3. seek the support of the Commonwealth and the jurisdictions to develop a road improvement regime, including through pilot studies.
4. continue to seek, assess and progress infrastructure project proposals under the reform and investment framework.

3. Background: the Australian freight industry

Freight involves the movement of goods. This is done by vehicles (ships, planes, trucks, trains), across infrastructure elements (shipping lanes and ports, air lanes and airports, roads, railway lines and pipelines). Freight can be segmented by product, market, mode and location. Freight can also be segmented into different tasks, which can face different transport, logistic and economic issues.

Table 1: Some freight tasks in Australia

Task	Location	Mode
Bulk minerals	Mining regions to ports	Rail, shipping, pipelines
Agricultural produce and livestock	Regional Australia to urban areas and ports	Road and rail as complements, and as substitutes, shipping, and some aviation
General freight, interstate line haul	Between major urban areas and industrial centres	Road and rail as complements, and as substitutes
General freight, urban distribution	Urban centres	Road
Industrial freight	Between major industrial centres	Road and rail as complements and as substitutes, shipping

Source: Bureau of Infrastructure, Transport and Regional Economics and the Office of the Infrastructure Coordinator, July 2010.

Freight is a derived demand, therefore land planning decisions, such as permitted locations for industry and residences, have a critical impact on freight activities and the routes used by trucks and trains. Any inefficiencies are passed on through supply chain and result in lost national competitiveness.

A further implication of being a derived demand is that any scenario analysis needs to consider factors that may affect the type and location of freight, as well as the transport and infrastructure it uses. For example, changes in climate may affect not only the condition of infrastructure used for freight, but the location of freight generators and the choice of mode.

Objectives for freight generally seek a balance between economic contributions, external factors and social considerations.²

A land freight network comprises the infrastructure which freight vehicles use.

²For example see *Freight Futures - the Victorian freight network strategy*.

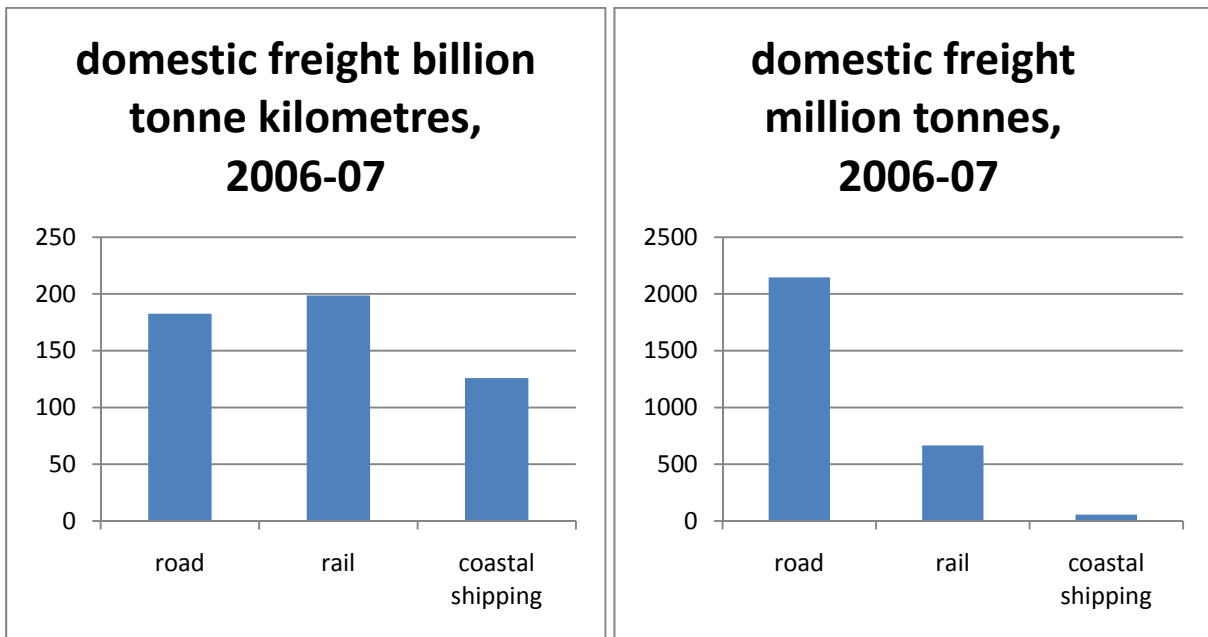
Size

The freight sector is a substantial economic activity in Australia. It generates and facilitates economic growth and employment, and accounts for a significant share of GDP.³ The value of the goods moved is considerably higher than such estimates and freight is critical to the economy.

Although Australian productivity showed strong growth in the 1990s, aggregate multifactor productivity is now no higher than around the level of the turn of the century. Transport and storage provided a positive contribution to productivity up to 2007-08, but declined substantially during the Global Financial Crisis in 2008-09. Improvements in freight efficiency would assist productivity growth.

Measures of freight include distances, tonnages, tonne-kilometres and freight vehicle kilometres. Significant aspects include the time taken to undertake a task, and ‘reliability’ or variations and delays to the average or scheduled time to move goods. Aggregate domestic freight task by mode is shown in Table 2 below.

Table 2: Freight aggregates



Source: Bureau of Infrastructure, Transport and Regional Economics and the Office of the Infrastructure Coordinator, June 2009.

In 2006-07 tonne kilometres on rail exceeded those on roads, due to higher average haul distances. Most freight consignments in Australia move on roads.⁴

³There are no reliable estimates of freight transport’s contribution to GDP in Australia. The National Account’s definition of the transport sector includes both hire and reward passenger and freight transport services, but excludes ancillary transport services. The Australian Logistics Council has estimated that transport and logistics activity is about 14 per cent of GDP—which appears high. The BITRE (2001) Working Paper 49, using some gross assumptions about the share of transport expenditure in total logistics costs, estimated transport and logistics share of GDP could be as much as 9 per cent.

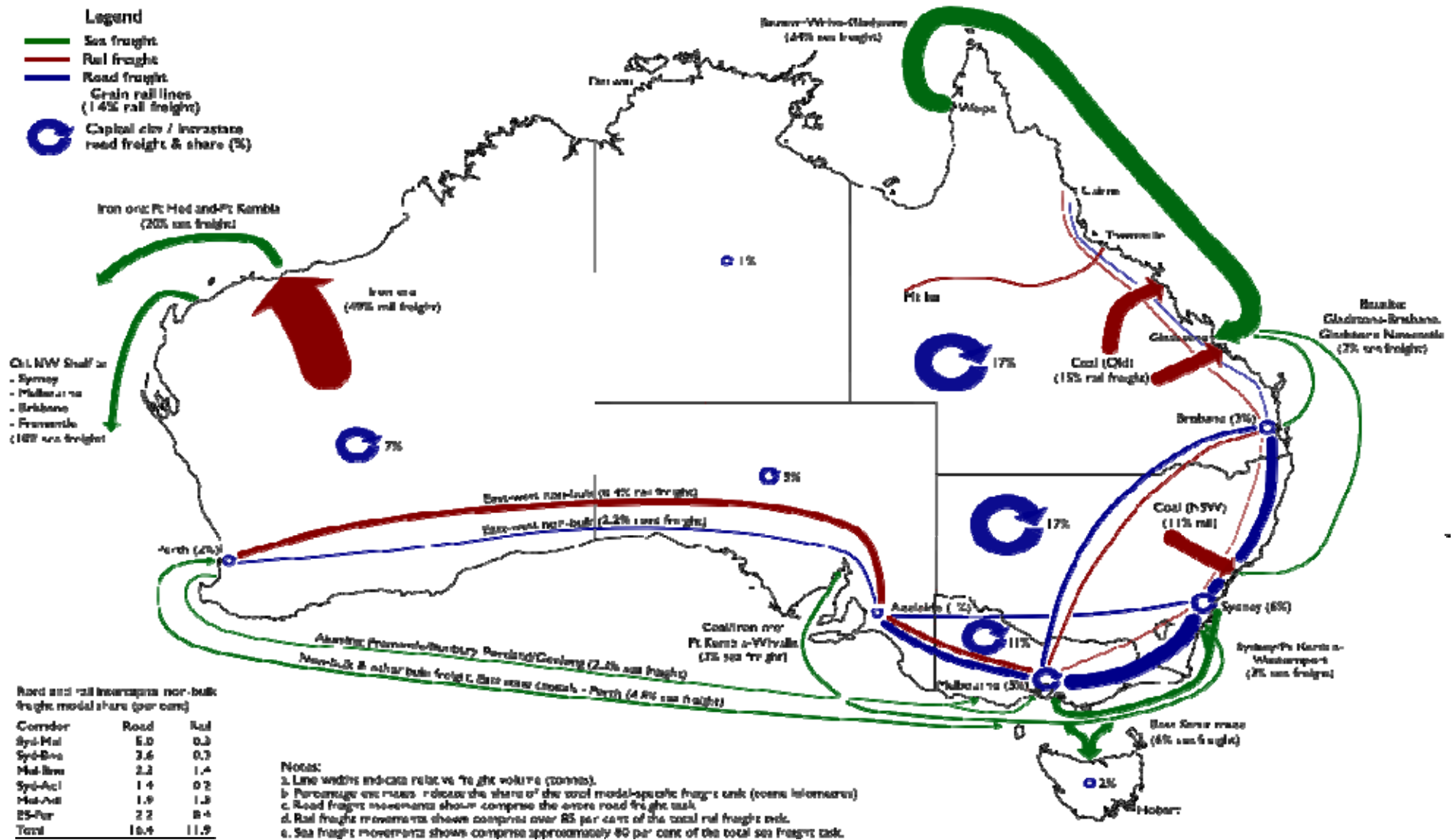
⁴ Further information on national freight aggregates, including road and rail shares, and of bulk and non-bulk tasks is reported in, for example, Productivity Commission, *Road and Rail freight infrastructure pricing*, National Transport Commission, *Twice the Task A review of Australia’s freight transport tasks*, and Allen Consulting Allen Consulting, *National Freight Network Strategy Background paper*.

Location

Table 2 does not show that one mode is 'more important' than another because many goods need to move on multi-leg journeys where several modes are used. Shipping and railways tend to move large amounts of goods per vehicle and have a higher share of bulk commodity freight. Most freight journeys include a land transport segment, so there are many more truck movements than train or ship movements.

The relevance and importance of freight to communities can vary across regions. Bulk commodity movements tend to be in specific regions, for example the Pilbara in Western Australia, or the Goonyella system in Queensland. General and mixed freight activities tend to be greater within and between localities with greater population and economic growth.

Map 1 shows the larger domestic freight flows in Australia. More corridor or location specific freight flows are shown in documents such as Auslink/Nation Building corridor studies and state freight plans and strategies.



Map 1: Domestic freight flows 2006-07

Structure

Freight is a profit seeking activity, and nearly all freight vehicles are operated by the private sector. The pattern and level of freight reflects the outcome of commercial or business forces operating within a framework set by governments. That framework includes transport matters such as 'rules' for the use of infrastructure, but it also extends beyond them. Important implications include that the ability of government to influence freight tends to be higher where there are larger freight flows. The main mechanisms of government influence include regulation of infrastructure use.

Line haul tasks can include strong competition among operating firms – truck companies and train operators. Improvements in efficiency are often passed through to customers, and therefore affect the competitiveness of the national economy, even if domestic transport is not itself trade exposed.⁵

Much of the land transport infrastructure used for several classes of freight and particularly by heavy vehicles is owned or controlled by government. Different levels of government are involved in providing this infrastructure. Monopoly characteristics are especially important for the land transport infrastructure used for the movement of most goods – core networks; however, in some situations monopoly potential is limited by inter-modal competition.⁶

Growth

Reports over several years suggest that considerable growth in freight is expected. Government agencies produce projections and forecasts for freight at various levels of aggregation. Map 2, from the Bureau of Infrastructure, Transport and Regional Economics shows projected transport flows at a national level for Australia in 2010 and 2030.

⁵For this reason in the 1990s the Productivity Commission undertook a number of studies of Australia's infrastructure service industries including rail freight, coastal shipping and some aspects of roads. Bureau of Industry Economics, *International Benchmarking Overview*, 1995.

⁶For example there is a view that the market power of rail line owners is influenced by characteristics of parallel road transport – for example that the Hunter coal lines (with no effective road solution for the movement of the coal task) have potential market power greater than interstate lines on the north-south corridors (on which rail operators face competition from trucks on the Hume, Pacific and Newell highways).

MAP 2

MAJOR TRANSPORT AND IMPORT/EXPORT MOVEMENTS: 2010 AND 2030

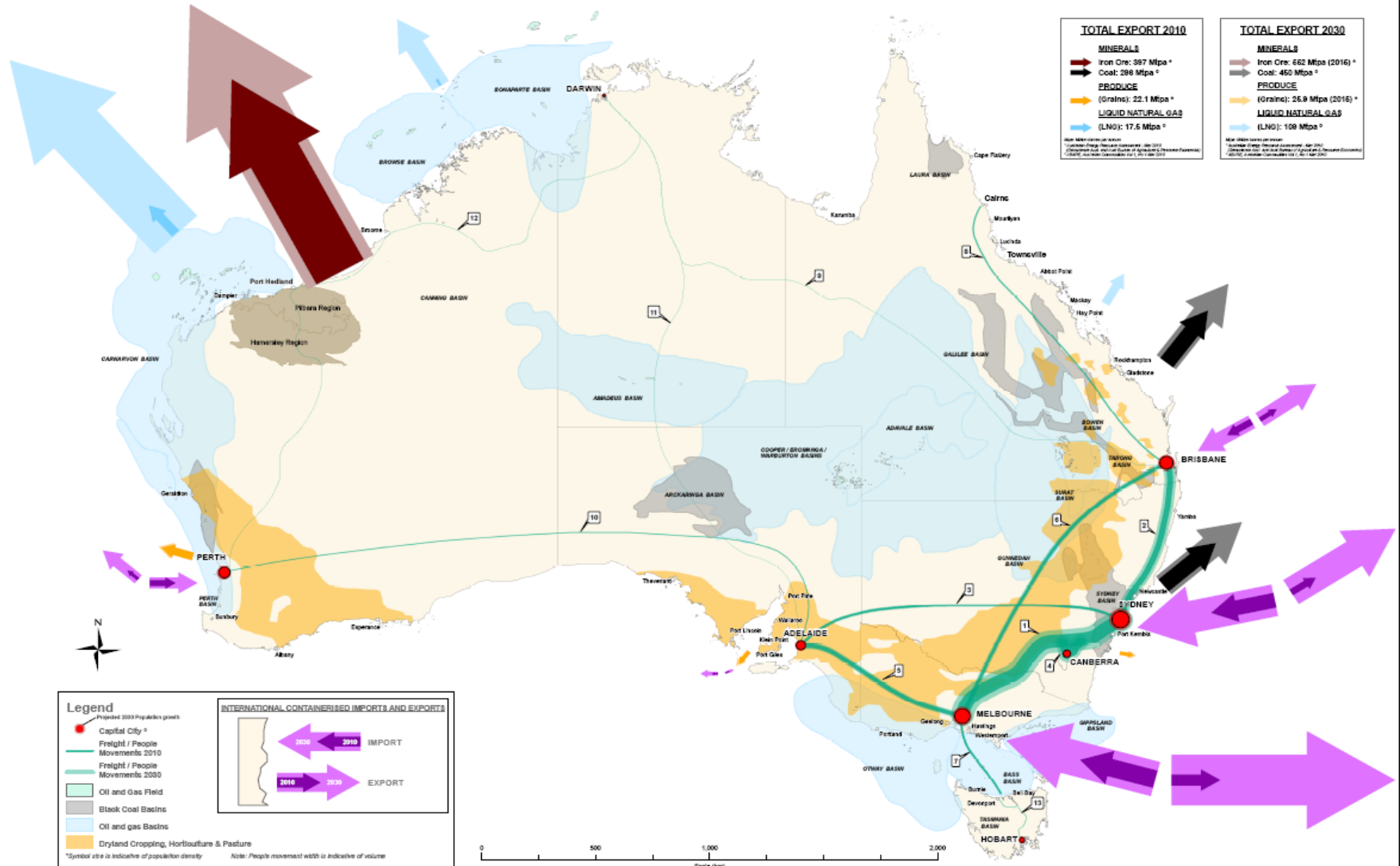
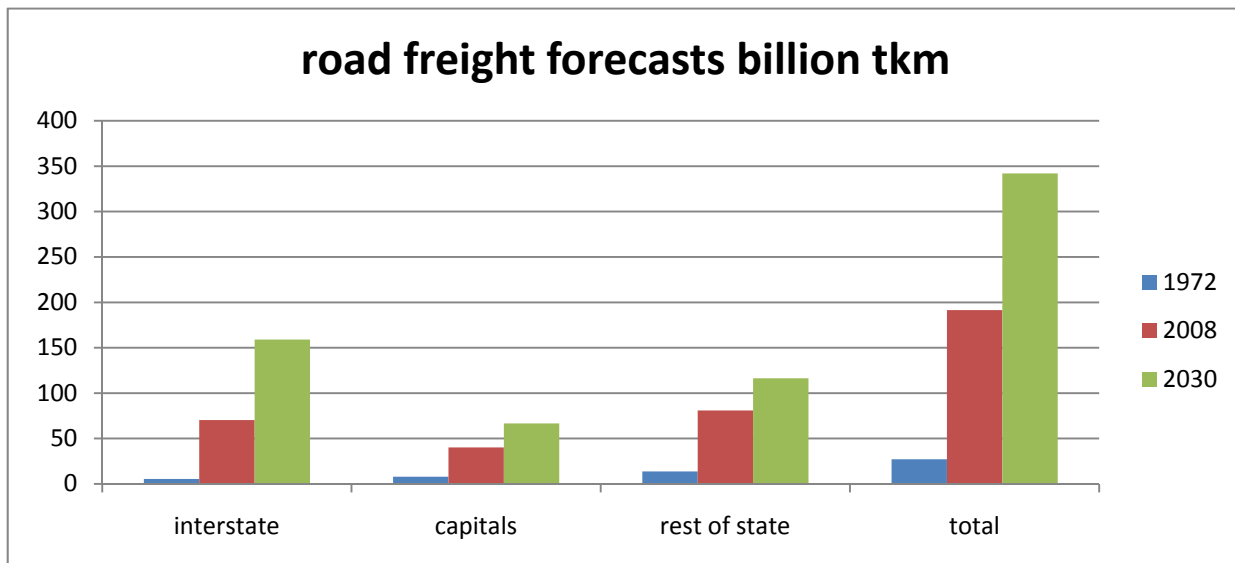


Table 3 shows some recently published freight forecasts.

Table 3: Road freight forecasts



Source: Bureau of Infrastructure, Transport and Regional Economics and the Office of the Infrastructure Coordinator, Sept 2010.

While Table 3 relates only to roads, there are similar projections for rail and shipping. These all suggest that freight is expected to increase rapidly, with some projections being for a trebling of freight by 2050. Within this growth, interstate freight is becoming increasingly important.⁷

An important implication of growth is that the merit of initiatives to raise infrastructure capacity is likely to increase over time, and it may be worth preserving opportunities to undertake projects in anticipation of future demand.

Infrastructure

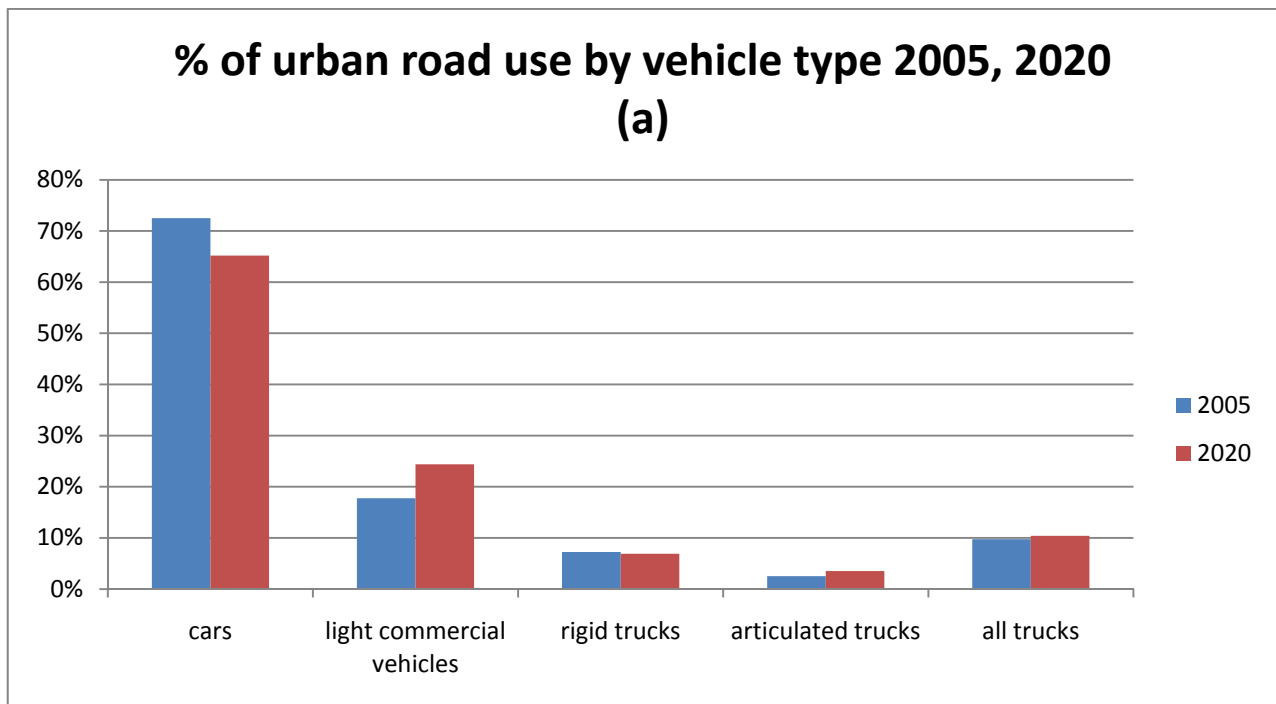
The use of transport infrastructure by freight activities is 'layered' in most cases. For example, some road and rail segments carry multiple types of freight such as agricultural produce, interstate line haul, urban distribution and industrial freight. This is particularly evident near ports.

Currently, most of the transport infrastructure used by freight is also used for personal transport. There is virtually no freight specific transport infrastructure. Table 4 shows some of the relative use of roads by trucks and other vehicles, and demonstrates that trucks comprise a relatively minor part of aggregate traffic flows in urban areas, and that this is expected to remain the case in the medium term.⁸

⁷See for example, National Transport Commission, *Twice the Task A review of Australia's freight transport tasks*; Infrastructure Partnerships Australia, *Meeting the 2050 freight challenge*. Mode specific forecasts include those in the background paper for the draft national ports strategy, and for rail those by the Australian Rail Track Corporation *North-South investment strategy*, and *investment on the East-West corridor*.

⁸Hence the term 'freight infrastructure pricing' is a misnomer. Most policy discussions have considered charging for freight vehicles on the transport infrastructure they use.

Table 4: Relative use of roads by trucks and other vehicles



(a) Vehicle kilometres travelled (vkt) multiplied by passenger car equivalent units (pce), with cars = 1.0, light commercial vehicles =1.5, rigid trucks = 2.5, and articulated trucks = 3.0.

Source: Bureau of Infrastructure, Transport and Regional Economics and the Office of the Infrastructure Coordinator, Sept 2010.

Congestion on infrastructure

Congestion is primarily an issue in urban areas, where road and rail network use is most intense, and is a significant challenge to national productivity.

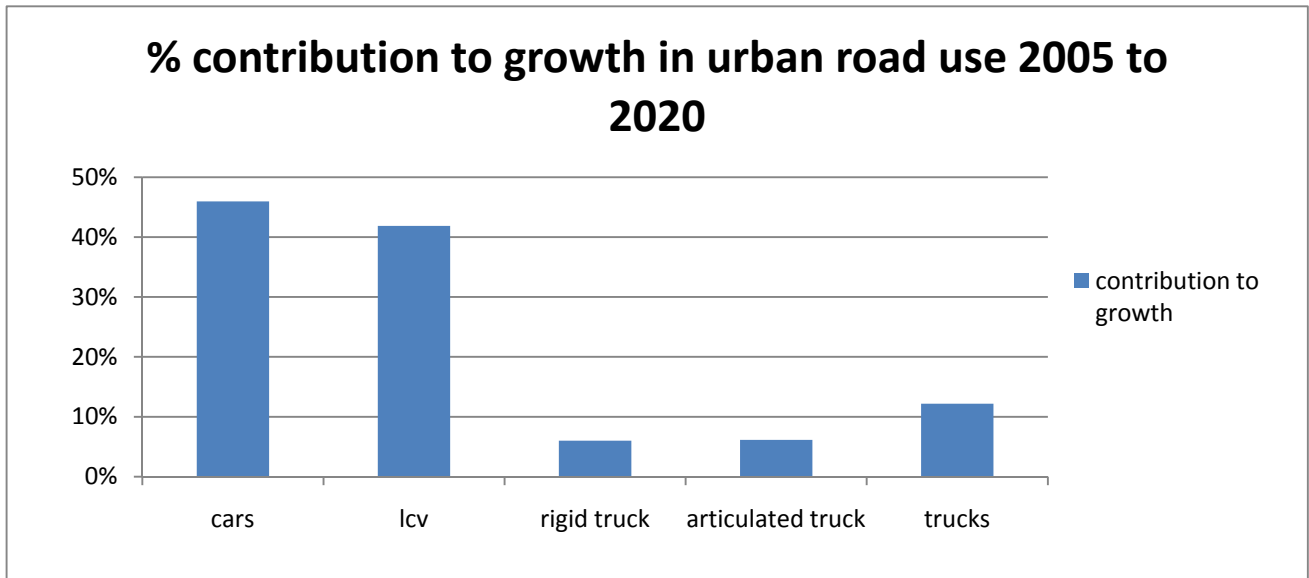
Freight is a small part of the transport task across transport infrastructure networks, however, there are some routes on which freight is concentrated and comprises a higher proportion of total traffic. These include the highways, long distance rail lines and port related roads.

In most cases, transport infrastructure capacity is not effectively priced and traffic is mixed, for example cars and trucks share the same road lanes at the same times, and rail 'passenger priority' principles are not backed by explicit access charges. Hence freight can be affected by congestion caused by personal transport on both road and rail networks. Freight can also contribute to congestion.⁹

⁹See for example; Sandra Lennie, *Assessing the spatial impacts of multi-combination vehicles on an urban motorway*.

Table 5 provides an indication of contributions to road use, and therefore congestion, taking account of different vehicle ‘footprints’.¹⁰

Table 5: Indicative contributions to urban road capacity use



Source: Bureau of Infrastructure, Transport and Regional Economics and the Office of the Infrastructure Coordinator, Sept 2010.

Table 5 suggests that trucks will make only a small contribution to any increase in city wide congestion in the medium term, even at ‘twice the task’ growth rates. At an aggregate level, urban road congestion may be more of an issue for freight than freight is for congestion. Wherever infrastructure is jointly used, any policy for freight needs to focus on the rates of growth of other traffic, not merely freight.¹¹

Urban congestion could be reduced by greater public transport connectivity, speed and reliability. There is an issue about whether there is an ‘equilibrium’ level of congestion on some roads; amenable to pricing and to services offered by separated mass transit systems. If so, urban mass transit operations may be important to freight at the road ‘capacity values’ implicitly used in project assessment guidelines.¹²

¹⁰Matters that are relevant to congestion, but not taken into account in table 5 include time of day movements, for example, trucks may avoid commuter peaks, and the specific routes that trucks and other vehicles take.

¹¹Rail networks in cities face a similar issue. For example in the NSW metropolitan rail area there are approximately 2800 train movements a day of which 200 are freight trains. Given statutory passenger priority principles, freight trains are allowed to operate on the capacity left after passenger trains.

¹²The equilibrium level is related to the Downs-Thomson paradox. See: Kerry Wood *The paradox of congestion* and subsequent debates. John Odgers, *Have all the travel time savings on Melbourne’s road network been achieved?* Bureau of Infrastructure Transport and Regional Economics, *Moving urban Australia: can congestion charging unclog our roads?* (chapter 2.5). Road capacity values can be estimated from Australian Transport Council guidelines which at certain ranges have the travel time (decongestion) values per passenger-car-equivalent unit of large trucks being less than cars.

In 2007, the Bureau of Infrastructure, Transport and Regional Economics provided some projections of urban road congestion up to 2020 with a figure of \$20 billion per annum widely reported.¹³ Given the significance of this issue to freight, there is a strong case for the congestion forecast to be tracked.¹⁴

Congestion also is an issue on urban railways. Commuter rail patronage has increased sharply in recent years. If this trend continues more rail track space will need to be used for more suburban passenger trains. A consequence is that freight train operation may be restricted by the types of 'curfews' already in place in Sydney and Brisbane. The matter is not easily resolved, since any increase in public transport, including in the number of passenger train services, may be needed prior to introduction of a 'full transport market' which includes road capacity charging. Such an increase may create more space for freight on urban roads, but not on rail.¹⁵

Infrastructure pricing and investment

Road and rail infrastructure have different arrangements for pricing, charges, financing and investments. Different arrangements make it difficult to assess whether there are distortions in planning, investment and decision making.

This is compounded by the joint use of infrastructure by personal and freight vehicles. The charges levied on freight vehicles are influenced by use/charges for personal transport vehicles, which also vary by mode. Distortions across modes can be caused by distortions within modes. These distortions can echo along supply chains; for example, congestion near ports can impact on distant regional areas.¹⁶

These difficulties are magnified by the long standing planning approach to transport infrastructure of 'predict and provide', largely from taxation revenue, including transport taxes. In many cases transport infrastructure is supply driven.¹⁷

If there are distortions, freight efficiency may be most affected where there is the potential for competition between trucks and trains, or between freight and passenger vehicles. At present, the potential for these is strongest in general freight markets with relatively long distance line hauls or high traffic densities. These are on highways and main roads which run parallel to rail lines, including to urban ports.

¹³Bureau of Infrastructure, Transport and Regional Economics, *COAG Congestion Review*.

¹⁴Some recent evidence regarding growing road congestion is ambivalent. While there are anecdotal reports of substantial increases in congestion, some of the publicly available data is less clear. At times it has been reported that car use in some cities has decreased, for example in Sydney in 2008, and reported average vehicle speeds on urban arterial roads and motorways in some cases has not substantially reduced. See NSW Minister for Transport Minister for Roads, *Public transport up, car use declines in NSW*, and Austroads, *National Performance Indicators*.

¹⁵Bureau of Infrastructure Transport and Regional Economics, *Moving urban Australia, Can congestion charging unclog our roads?*

¹⁶The issue was discussed in: Productivity Commission, *Road and Rail Infrastructure Pricing*. An example of supply chain effects drawn to the Infrastructure Australia's attention is congestion on the rail network through Sydney to Port Botany, which impacts on freight operators and their customers at Newcastle and further north.

¹⁷The principal exception is the large scale minerals railways and vertically integrated infrastructure.

Regulation

The effect of regulation differs between modes. Prescriptive regulation is the main tool governing road use and access to road networks. However, regulation is increasingly seen as only one tool within a package of measures aimed at achieving economic and social goals, for example in the systems approach to transport safety.

Some important national reforms to transport regulation being progressed by governments are discussed in Section 5 of this paper.

4. Constraints and challenges

The principal constraints on a more efficient freight sector are:

- restricted use of infrastructure
- encroachment of freight activities
- uncertainty about capacity for growth
- lack of responsiveness of infrastructure to economic demand.

A number of trends are likely to make these constraints more binding on freight in the future.

Restricted use of infrastructure

Restrictions on the use of infrastructure can include limits to vehicle sizes and operating hours, and requirements for different vehicle configurations and documentation when crossing jurisdictional borders.

Substantial freight productivity gains were made from the widespread introduction of B double trucks. However, the potential for further gains from these vehicles on main routes is limited, and the impact of past reforms may diminish, resulting in slower productivity growth in the future.¹⁸ Potential productivity gains from a next generation of trucks, high productivity vehicles, have been described as a 'quantum leap', however, their use is restricted.¹⁹

In some cases, the truck size permitted on a highway is not permitted to the freight precinct. Consequently either the freight needs to be double handled, or inefficient vehicle sizes are used on highways. The result is an increase in freight operating costs, excess energy consumption and emissions, and more freight traffic and a loss of potential productivity. This is referred to as the 'first and last mile' issue - the inability to drive a truck the full length of the freight journey. Last mile issues could be seen as a by-product of increases in vehicle sizes on major routes, or as a result of a mismatch between land uses and transport planning. It is an interoperability issue that can lead to supply chain disconnects.

The National Transport Commission has observed that the community needs to be assured that potentially larger vehicles deliver better road safety outcomes than the current fleet. Achieving better outcomes should involve a balance of improved driver behaviour, improved safety features of heavy vehicles and improvements in the road network and its operation²⁰, as well as creation of a transport marketplace involving cost reflectivity.

Other examples of restrictions arise in relation to rail. In some cases it is uncertain what urban rail capacity can be made available to freight because the systems and methods of calculating and allocating efficient capacity are unclear or may be overly cautious.

¹⁸David Mitchell, *Heavy vehicle productivity trends and road freight regulation in Australia*.

¹⁹Kim Hassall, *Bi-modal terminals – shrinking urban freight exposure through a quantum leap in freight productivity*.

²⁰National Transport Commission, *National Transport Policy Framework Vol 2*.

In the longer term, choice of technology may restrict opportunities to use infrastructure. It is possible for certain projects and operations to 'lock out' or increase the cost of options for interoperability. Such projects may have a local commercial benefit, but a net cost to national productivity due to a deleterious impact on the potential for competition, and loss of scale economies. As networked interstate freight is expected to grow, these costs are likely to increase over time.

The best known historical example of a lock out is the break of railway gauge dating from the 1800s; however, examples continue to occur today. These include rail gauges on new routes with national connectivity potential, train control systems, corridor alignments which are chosen for road or rail only, and alienation of lands. These are symptomatic of a lack of integrated planning and decision making across networks.²¹

More recently the potential of 'smart technologies' to enhance infrastructure use has become apparent. Interoperability of such technologies throughout key transport links in Australia is important for national productivity.

Encroachment of freight activities

Encroachment is a symptom of problems with the coordination of transport and land planning systems. It was noted as a key issue in the proposed national ports strategy. Stakeholders point to examples of urban encroachment and lost opportunities to efficiently use freight lands and corridors as a major concern.

Encroachment also occurs when freight activities are unable to expand to expected levels, while options for the relocation of freight activities can be severely limited by shortage of suitable land, especially in cities.

Some local communities do not welcome freight vehicles, while some members of the freight industry argue that some existing route restrictions on vehicle sizes or operating hours are arbitrary. Accidents or delays involving freight vehicles can become high profile events attracting adverse commentary and calls for further regulation or restrictions.²²

Submissions to Infrastructure Australia in the context of the national ports strategy and the proposed national land freight strategy point to increasing concerns about supply chain disconnects. Disconnects occur at physical or organisation interfaces. They are the counterpoint to seamless transport and interoperability and can arise from encroachment, for example the interposing of residential lands between freight precincts or when new operating restrictions are imposed on freight vehicles in localities or along routes.

The placement of 'freight' generators outside of the urban area has been proposed as an option; however, the effectiveness and efficiency of this is limited. Such measures can result in excessive numbers and distances for smaller truck movements along city roads, with unnecessary local and general emissions and congestion.

²¹A rail interoperability conference was held in Sydney on 4 August 2010. The program notes: "There is a consensus among Australian rail industry bodies that interoperability is the most efficient way forward. But the looming problem is that to achieve a seamless system the varying operators need to purchase compatible equipment, which isn't happening at the moment".

²² Infrastructure Partnerships Australia, *Meeting the 2050 Freight Challenge* at p22-23. The National Transport Commission has commissioned some relevant research; Synovate, *Understanding public perceptions of road freight*.

The proposed national ports strategy noted that freight is perceived as a 'poor cousin' in terms of planning which can lead to freight being locked-out in some locations. The strategy identified that there are few published port and related landside infrastructure plans. A published freight plan is one way of ensuring that freight issues are brought to the attention of planning decision makers.

Uncertainty about capacity for growth

In 2008-09 Infrastructure Australia used a submissions-based process to identify infrastructure priorities. It received and examined a number of proposals for infrastructure that may contribute to freight productivity. It also reviewed many proposals for government funding.

The proposals provided to Infrastructure Australia fell short of identifying future infrastructure needs for freight:

".... areas of infrastructure needhave not been identified in proponent submissions. The need for a new corridor around Sydney capable of serving multiple types of infrastructure is a prime example."²³

The rail industry, led by the Australian Rail Track Corporation, provided submissions which dealt with transport infrastructure on a national basis, however, this was limited in most respects to the infrastructure under its current direct control.²⁴

Initially, the critical issue of identification and reservation of freight lands, or urban terminal sites, was only explored in any depth by Victoria and the rail industry. This issue is now being explored in other places including Queensland and NSW.

Other public sources of freight related infrastructure proposals are the Auslink corridor documents published in 2007 and various jurisdictional strategy documents. While these may provide some foundation for part or most of a national land freight network, they do not represent a complete body of work for a long term plan. Most do not set out estimates of capacity for given vehicle sizes, or set out rights for vehicles to use particular network segments.²⁵

Similarly, the most recent review of the National Transport Commission commented on difficulties in developing a national transport plan.

²³Infrastructure Australia, *Getting the fundamentals right for Australia's infrastructure priorities*, p3.

²⁴Australian Rail Track Corporation, *Submission to Infrastructure Australia*, 2008.

²⁵For example, the Commonwealth also has funded studies into a potential freight route which is not on the Auslink network (Maldon-Dombarton). Queensland *draft SEQ 2031*, Victoria: *Freight Futures*, NSW; Infrastructure Australia submission August 2010 (*M5 East, M2-F3, Northern Sydney Freight Corridor, Container Freight Improvement Strategy*).

The Organisation for Economic Co-operation and Development 2010 *Economic Survey* found that Australia suffers from an infrastructure deficit and argued that the management of public infrastructure provision needs attention. Relevant aspects include information gaps and weak coordination among governments, and regulatory and institutional arrangements for investment. It further argued that future audits of national infrastructure need to focus on gaining a clearer picture of the supply of infrastructure services in relation to needs, rather than be simply driven by proponents of certain projects.²⁶

In the medium term, capacity for growth also is affected by asset condition and management. Asset management is part of the ongoing business of infrastructure asset owners, and asset management plans are generally not publicly available.

The condition or sustainability of various transport infrastructure assets has been the subject of comments or submissions to Infrastructure Australia. This raises a question about whether it is desirable to have more public knowledge about the anticipated future condition of assets.

The condition of some rural local roads used for freight, and the asset management and financial position of some local governments, also has attracted attention and Infrastructure Australia has commissioned research to further explore this issue.²⁷

Another source of uncertainty about infrastructure capacity needed for freight growth arises from increased personal transport on main roads and rail lines in urban areas. Some submissions to Infrastructure Australia in 2008-10 included proposals for freight improvements which also relate to personal transport in cities. Few if any mechanisms were proposed to lock-in benefits for freight. More recently, there has been consideration of freight related measures for some projects, including on entry ramps to proposed managed motorways. As against this, it appears that there were some unrealistic expectations of how freight vehicles might be accommodated on already congested multi-use infrastructure.

The proposed national ports strategy suggested dedicated freight infrastructure to overcome the problem of freight being crowded out on some route segments. It recommended that this be investigated by the Bureau of Infrastructure Transport and Regional Economics. This issue is being explored in the United States as part of its freight research program and there are examples of dedicated freight infrastructure in Australia and other countries.²⁸

Accurate and reliable freight data is critical to ascertain freight infrastructure needs and to inform policy development. Currently, freight data is inadequate, or is descriptive rather than analytic. Consequently, the ability to produce forecasts and scenarios is limited. There also are differences in the freight forecasts presented to Infrastructure Australia.

²⁶ OECD *Economic Surveys Australia 2010* chapter 3.

²⁷ Allen Consulting, *Options for improving the integration of roads governance in Australia The role of Local Government*.

²⁸ See: Departments of Transportation of Missouri, Illinois, Indiana and Ohio and Federal Highway Administration, *Dedicated Truck Lanes Feasibility Study Phase 1 Report*.

Considerable freight and transport infrastructure performance related data, particularly for major transport corridors, is held by government agencies, but is not published.

Reliance on government funding for infrastructure is a further source of uncertainty about capacity for growth. Freight and other projects at various stages in Infrastructure Australia's project pipeline have a capital cost in the order of \$83 billion.

The economic argument for general taxpayer support of infrastructure principally used for commercial activities is weak. Government funds are limited and the Intergenerational Reports expect increasing pressure on government budgets.²⁹ Government funds can also fluctuate over short time frames, in contrast to the long term funding streams required for major infrastructure programs.

While government funding may be a desirable short term position for commercial interests, there is the potential for it to lead to underinvestment in infrastructure.

Even with direct freight user charging, underinvestment in infrastructure could occur if an allocation of potential infrastructure investment costs is placed to personal transport, and the contribution from personal transport to investment is made by government.

Lack of responsiveness of infrastructure to economic demand

A lack of responsiveness of infrastructure to demand occurs when infrastructure users and their customers have limited commercial influence over the infrastructure services available to them. Evidence of this in freight transport includes congestion, low reliability and claims about unexploited opportunities for investment.

Congestion is discussed in Section 3 (above), and the proposed national ports strategy identified concerns about truck queues at ports and urban road congestion.

Freight reliability can become a political concern on shared use infrastructure. Governments have sought advice on delays to personal transport 'caused' by freight.³⁰ Low freight reliability is often due to a lack of infrastructure capacity at peak periods. In some cases freight unreliability may be due to matters outside the freight operators' control, but there is limited regular public reporting on infrastructure reliability or causes of unreliability.³¹

Reliability of despatch and deliveries is a critical feature of freight services because business operation, opening hours etc, can depend on the certainty of freight deliveries. Perceptions of low rail reliability are given as a reason for a preference for road freight. Recently, international attention has been paid to reliability on land transport networks, including implications for freight and logistics. Aspects examined include incorporation of reliability into cost-benefit analyses, infrastructure supply and management, pricing and mitigation of impacts.³²

²⁹Treasury, *Intergenerational report*.

³⁰ For example, see Independent Transport Safety and Reliability Regulator: *Impact of freight incidents on CityRail passenger service reliability*.

³¹ Examples are: Austroads, *National Performance Indicators*, and Australian Rail Track Corporation, *Performance Indicators 2007 Access Undertaking*.

³² OECD Transport Research Centre, *Improving reliability on surface transport networks*.

Claims have been made that opportunities to improve freight productivity, safety, sustainability and amenity are not being identified because of an inability of freight interests to secure rewards from infrastructure investments.

Trends

Some trends could make these constraints more binding and reduce the contribution of freight to productivity. Recent reports on freight have drawn attention to trends in demography, energy and climate.

Urban growth dynamics including dwelling consolidation, housing renewal in industrial areas, and relocation of employment activities are important to freight.

Table 6 shows urban growth over the 16 years to 2006 and forecast for the next 20 years.

Table 6: Urban population growth

City	Population 1990	Population 2006	Population 2026
Sydney	3,656,500	4,119,190	5,426,300
Melbourne	3,080,900	3,592,591	5,038,100
Brisbane	1,128,700	1,763,191	2,681,100
Perth	1,193,100	1,445,078	2,267,600
Adelaide	1,049,900	1,105,839	1,384,500
Gold Coast	265,500	472,279	n/a
Newcastle	428,800	141,753	n/a

Source: Major Cities Unit, November 2010.

General freight is likely to grow near population centres. However, population growth and urban consolidation can place pressure on routes used by freight vehicles and on freight precincts, particularly if there are major changes in the locations of residential lands. Arguments in favour of urban consolidation around transport corridors may need to take account of freight movements on main roads and rail lines, including in the evening.

Map 3 shows the current spread of population centres in Australia and the major road and rail routes between them. Generally these centres are seen as the likely future nodes for population growth and hence sources of general freight growth. In addition to these the rapid growth in mining and industry, especially in Australia's north, may generate substantial domestic freight and there are ambitions to create larger settlements in some of these areas, for example 'Pilbara Cities'.³³

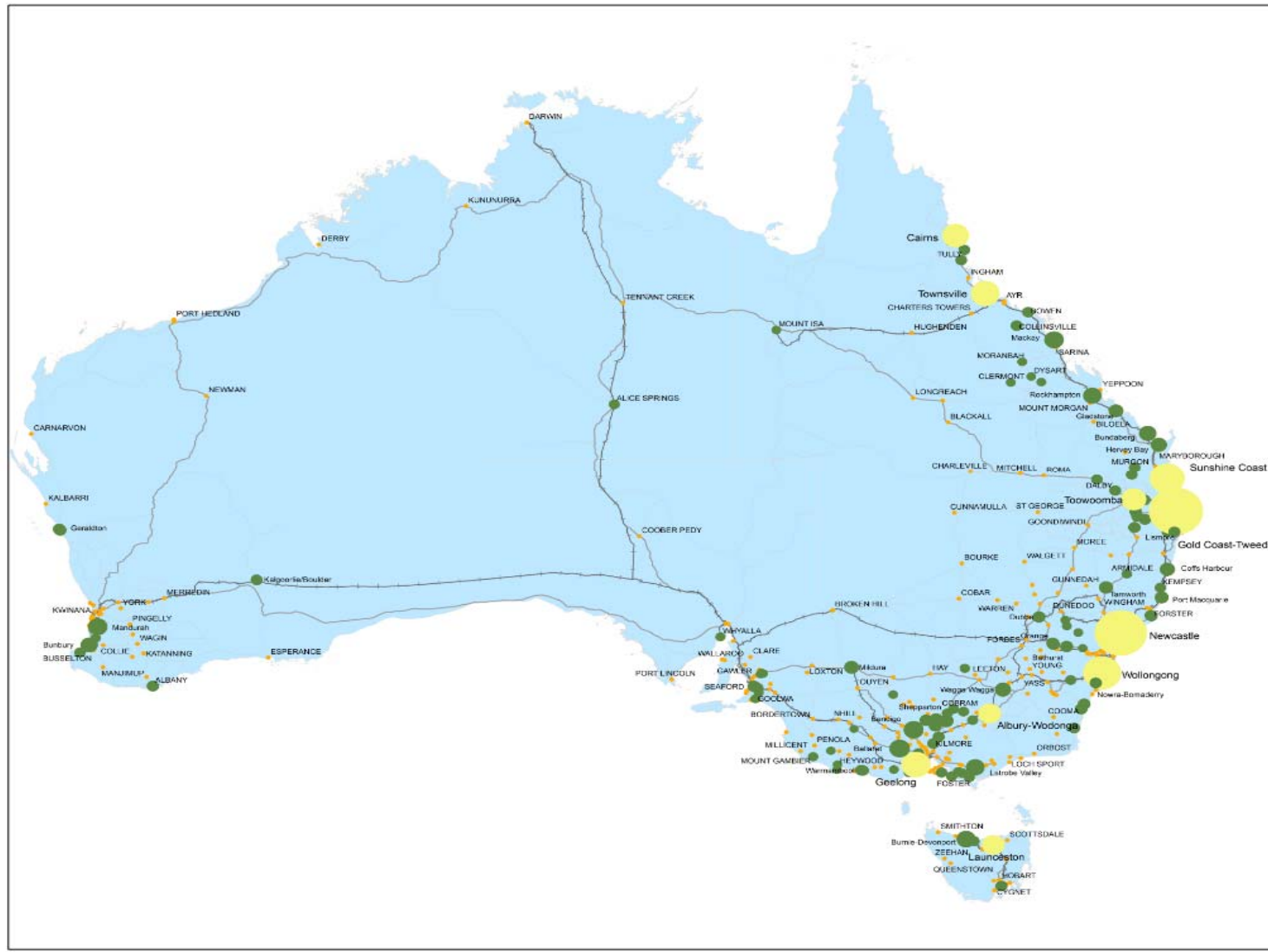
³³Infrastructure Australia, *Getting the fundamentals right for Australia's infrastructure priorities*.

Demographic and other changes also have the potential to place new pressures on government budgets, for example to deal with health issues of an aging population noted in Intergenerational Reports. It is possible that these and other trends may create additional pressures for government funding of personal transport especially public transport, under some energy and climate change scenarios.

The Commonwealth has issued a discussion paper on sustainable population. Aspects of this discussion are relevant to land freight.³⁴

³⁴Department of Sustainability, Environment, Water, Population and Communities: *Issues Paper- A Sustainable Population Strategy for Australia*, December 2010.

Map 3



Population of Australia's regional cities and centres

Legend

- Built up areas
- Major rail corridor
- Major road corridor
- Sealed roads

Regional Centre Population 2009

- 10,000
- 50,000
- 100,000

Non-Capital City Population 2009

- 100,000
- 500,000
- 1,000,000



Version Date: 06/09/2010

Source:
 ABS 3218.0 Regional Population Growth;
 ABS Statistical Districts 2009;
 2009 Local Government Areas*
*2009 Local Government Areas used outside of statistical districts

Disclaimer: While every effort has been made, the Major Cities Unit cannot guarantee the accuracy of its sources.



The need for energy efficiency is also likely to increase in the future. Efficient energy use in the freight industry is related to factors such as vehicle payload, the level and variability of speed, and gradients. Each of these is related to freight vehicle size and smoothness of freight vehicle flows. Also important would be the potential for freight generating activities, such as manufacturing and warehousing, to move in response to changes in transport and energy costs. The flexibility and speed of transport responses to significant changes in the availability of particular energy sources is a further issue.

Freight and freight generating activities, such as manufacturing and warehousing, may also be affected by climate change. It is unclear to what extent freight planning documents consider scenarios of climate change impacts on physical infrastructure or on demand patterns. Victoria has undertaken climate change risk assessments for transport infrastructure, to identify how climate change may impact on physical infrastructure, such as rates of degradation. Some significant longer term risks were identified in relation to transport.³⁵ Relevant matters include the frequency and intensity of rainfall (and floods), winds, and degradation of materials used in transport infrastructure.

³⁵Australian Transport Council, *Communique May 2008*, Victorian Government, *Infrastructure and climate risk assessment for Victoria*, 2007.

5. Freight policies

History

Because many freight systems in Australia have their origins in pre-federation colonies, any discussion of a national land freight network for Australia has historical overtones. For example, federation debates considered the need for a national (land freight) transport system, and a national objective since federation has been standardising the gauge of main rail lines.³⁶

There have been incremental changes to improve connectivity, such as the National Highway Network (1974) and a Designated Interstate Rail Network (1997). More recently, attention has been paid to reducing the 'regulatory' break of gauge. One of the most important recent initiatives has been the creation of the Australian Rail Track Corporation in 1997 to control interstate rail lines.

Transport policies can reflect general principles that governments want pursued across sectors. An example of this in the 1990s was the introduction of national competition principles, including access regimes that can apply to all nationally significant infrastructure, except roads. A more recent initiative, also potentially far reaching, relates to the capital cities strategic planning systems.³⁷

All levels of government are engaged with freight. Apart from specific government portfolio responsibilities, notable aspects of engagement include the Auslink/Nation Building program, the National Transport Commission, Infrastructure Australia, the Australian Transport Council guidelines and state freight strategy documents.

From time to time maps and/or definitions of some form of a national transport network have been produced. These include Auslink/Nation Building, the former National Highways scheme, the Designated Interstate Rail Network, and the Australian Rail Track Corporation network. There are differences between these maps, and none purports to depict a national land freight network.³⁸

In most respects, policy initiatives have been directed at providing infrastructure to be used by transport as a whole, rather than identifying freight as a separate target. Many transport plans relate primarily to the application of government funding. The idea of a cross modal freight policy is relatively novel in Australia.

³⁶See: http://parlinfo.aph.gov.au/parlInfo/download/constitution/conventions/1898-1114/upload_binary/1898_1114.pdf;fileType=application%2Fpdf#search=%22second%20session%20%20RAIL%20GAUGE%201890s%201898%22, and *One nation: statement* by the Prime Minister, the Honourable P.J. Keating, 26 February 1992.

³⁷See: http://www.coag.gov.au/coag_meeting_outcomes/2009-12-07/index.cfm#cap_city_strat

³⁸See: for national highways, <http://www.ozroads.com.au/NationalSystem/nathwys.htm> for the designated interstate rail network: *National Rail Summit Communiqué*, Australian Transport Council (September 1997). for Auslink/Nation Building AusLink: *Green paper: towards the national land transport plan*, and <http://www.nationbuildingprogram.gov.au/whatis/network>, for ARTC: *Australian Rail Track Corporation Limited – Rail Network*.

Recent developments

In 2008 the Australian Transport Council agreed to a new transport policy framework. The policy framework included 10 thematic aspects including urban congestion, environment and energy, safety and security, and an economic framework for an efficient transportation marketplace.³⁹

A Ministerial Taskforce was established to advise on concepts for a transport marketplace, and to provide more detail to this framework. While not limited to freight, or to a national network, a marketplace concept is relevant to a national freight network. An Issues Paper suggested that the market design seek *'to achieve outcomes equivalent to the optimal outcomes that could be achieved by the ideal market'*.

The concept identified in the Issues Paper included functions for access management, infrastructure planning, investment management, regulatory management and pricing. It suggested that these functions should reflect principles applied across the transport sector. The Australian Transport Council considered the Taskforce Report in May 2009 and provided it to the review into Australia's Future Tax System.⁴⁰

Other major recent developments include discussions regarding institutions, the Council of Australian Governments' reform agenda and direct road charging. These are discussed at some length in the next two sections.

Institutions

There are differences between road and rail regarding their infrastructure organisations, in charging and in financing arrangements.

Road infrastructure is owned by government authorities. Major arterial roads and highways are owned by state government authorities. Rail lines are largely owned by government trading enterprises, with the main exceptions being the Pilbara iron ore railways, the Western Australia lines leased to WestNet, the Darwin-Tarcoola line, and the South Australian lines owned by Genesee and Wyoming.

Economic regulation applies to some railways but at present not to roads. Rail lines may fall within the class of essential facilities of national significance under the national access regime. There is also jurisdiction-specific economic regulation for access to most rail main lines, except those of minerals rail lines in north Western Australia. Access to Australian Rail Track Corporation lines is regulated via undertakings to the Australian Competition and Consumer Commission. Most of this regulation is 'light handed' where access is determined in a 'negotiate or arbitrate' framework and charges are between 'floor and ceiling' levels. For the Australian Rail Track Corporation, and under the national access regime, the Australian Competition and Consumer Commission is the potential arbiter of access issues.⁴¹

³⁹Australian Transport Council, *A National Transport Policy for Australia*, communiqué 2 May 2008.

⁴⁰*Economic Framework for an Efficient Transportation Marketplace Issues Paper*, December 2008 Available at http://www.rta.nsw.gov.au/rulesregulations/downloads/efetissuespaper_dl1.html

⁴¹A short summary is in Paul Bugler *Rail access-where are we now?* Rail Express February 17 2010.

The Council of Australian Governments is advancing a seamless national economy agenda to enhance long term productivity growth via changes to business regulation and competition arrangements. As part of this in 2009, the Council agreed to the establishment by 2012 of national transport regulators for maritime, rail and road heavy vehicles.⁴²

The Australian Maritime Safety Authority will be the national safety regulator for all commercial maritime vessels in Australian waters. A national regulator for rail will be established and the role of the Australian Transport Safety Bureau will be expanded for it to become the national rail safety investigator. Similar arrangements will apply for heavy vehicles (over 4.5 tonnes) on roads; however, each jurisdiction will retain control over determining road 'access approval'.⁴³

The Council of Australian Governments has also agreed to the need for certification of certain access regimes by relevant authorities, and consideration of matters related to regulation of access to 'interstate rail track'. Moreover it also has agreed to progress some road reforms (discussed below).

A national transport authority?

The question of a national transport authority, going beyond the scope of these reforms and into matters such as heavy vehicle access to networks and investment, has been raised a number of times over the last decade or so. While there are variations in these calls, for example, for freight or for all transport; for land transport or for all transport; for planning and/or economic regulation, it is useful to track the debate.⁴⁴

The issue was raised in the late 1990s in reports of the House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform which recommended a land transport commission. In 1999, the Australian Transport Council agreed to establish a National Transport Secretariat to provide advice on some national transport issues. In 2000, the Commonwealth Minister outlined his government's position on the issues, arguing that he could agree to a policy 'framework', and 'planning processes' through the Australian Transport Council, but not (on its own) to a 'plan'. The Minister indicated that the Commonwealth was prepared to consider a land transport body for cross-modal consideration of regulatory issues, but not for a role in investment or asset ownership.⁴⁵

⁴²See: http://www.coag.gov.au/coag_meeting_outcomes/2009-12-07/index.cfm#transport_regCOAG

⁴³It is important to note that each jurisdiction will retain its responsibility for determining access approval'. National Heavy Vehicle Regulator Office, *Road to Regulator Issue 1*.

⁴⁴Examples of arguments in favour of an independent (planning) body are in Infrastructure Partnerships Australia, *Meeting the 2050 Freight Challenge*, and submissions from the Australian Logistics Council and the Australasian Railways Association to Infrastructure Australia.

⁴⁵House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform *Tracking Australia an inquiry into the role of rail in the national transport network* (1997), *Planning not patching: an inquiry into Federal road funding* (1998), Australian Transport Council *communiqué 24 April 1998*, The Hon John Anderson MP Deputy Prime Minister, Minister for Transport and Regional Services, *Response of the Federal Government to Report of the House of Representative Standing Committee on Communications, Transport and Microeconomic Reform 'Planning not Patching' and 'Tracking Australia'*, *Report of the Rail Projects Taskforce 'Revitalising Rail'*, *Report of the Productivity Commission 'Progress in Rail Reform'*.

In 2002, the Commonwealth announced its intention for Auslink to be a national land transport plan and strategy. This was in the context of a review of the National Road Transport Commission. That review recommended a National Transport Commission to deal with 'regulatory reform', and another organisation to consider issues related to transport infrastructure: a National Transport Advisory Council. This Advisory Council was to take on the work of the National Transport Secretariat, however, it was not established and the Secretariat was wound up in 2003.⁴⁶

The Auslink policy development process included a Green Paper, a call for submissions and a White Paper. Submissions included comments on the review's proposal for a National Transport Advisory Council; and differences between a national transport plan and a Commonwealth funding program especially if the focus was to be on freight.⁴⁷

Under Auslink, studies for some 23 transport corridors were published; and, in 2004-06, transport system management guidelines were published under Australian Transport Council auspices, covering matters such as assessments of proposed government 'investments'. Local Government Planning Ministers have also published a charter for transport and land use planning.⁴⁸

In 2008, Infrastructure Australia was established as a statutory authority to advise on matters related to nationally significant transport, communications, water and energy infrastructure. Its role is to develop a blueprint for national infrastructure needs, advise on infrastructure gaps and bottlenecks; identify investment priorities, and policy and regulatory reforms.⁴⁹

The most recent consideration of the national planning issue by governments was in the context of the review of the National Transport Commission in 2009. It noted that:

'It has proven difficult to achieve a national transport plan. The ATC has articulated its vision but strategic planning and prioritisation at a national level to achieve that vision has been relatively ad hoc. Neither the ATC nor the SCOT appears to dedicate time to strategic planning on an ongoing basis.... In our opinion, governments, perhaps led by the Commonwealth Government, are best placed to drive improved planning. Organisations like the NTC and Infrastructure Australia can inform this process with advice on possible regulatory and/or investment impediments.'

The Australian Transport Council's response was that policy, planning and development should be led by governments.⁵⁰

⁴⁶Fred Affleck and Neil Aplin, *Review of National Road Transport Commission Act 1991* (2002).

<http://www.nationals.org.au/News/LatestNews/tabid/94/articleType/ArticleView/articleId/1922/AUSLINK-Building-our-National-Transport-Future.aspx>

⁴⁷Available at <http://www.infrastructure.gov.au/transport/publications/auslink.aspx>

⁴⁸As is the practice in discussions, in this paper the term 'investment' includes an outlay by government for capital works which may or may not involve some financial or other return to the government. This differs from the usual definition of 'investment' for which a direct financial return would be sought by the investor. See: Australian Transport Council *National Guidelines for Transport System Management in Australia*.

⁴⁹<http://www.infrastructureaustralia.gov.au/>

⁵⁰*Report to the Australian Transport Council by the National Transport Commission Review Steering Committee June 2009, and National Transport Commission Review, Australian Transport Council's Response and Recommendations to the Council of Australian Governments 2009.*

Subsequent to this OECD noted that:

*'the lack of coordination between the various levels of government and between jurisdictions...has been another source of inefficiency. Infrastructure spending decisions are frequently taken with no regard for national priorities. This is the case, for example, with freight Efforts have been made in the past to co-ordinate road and rail investment but the plan in question, Auslink (renamed the Nation Building Program following a change of government in 2007), did not include port infrastructure, whose lack of connection to the land transport chain reduced its benefits. The problem of inter-governmental coordination also takes the form of cost transfers.....'*⁵¹

National planner, regulator?

Some argue that there should be a body independent of any jurisdiction to develop and oversee a national transport plan, and possibly to undertake economic regulatory functions. The significance of this argument is that such functions are seen to directly influence access to networks, pricing of this access, and investment in the configuration, quality and performance of networks. The outcomes sought relate to network use and provision, not merely regulatory or funding reform.⁵²

Analogies have been drawn with the electricity and gas industries which, following Council of Australian Governments agreement, now have planning and (price) regulatory agencies. Infrastructure Australia has sought advice on the structure of the planning and regulation of these industries.⁵³ The planning and regulatory functions in question may be similar to those identified in the Ministerial Taskforce Issues Paper.

There have been suggestions that the Australian Competition and Consumer Commission could play the role of a transport economic regulator similar to its role as the Australian Energy Regulator. The Commission already plays an economic regulatory role for certain rail infrastructure.⁵⁴

In utilities and in rail there is a relationship between the economic regulator, planning and investment. This occurs because the regulator allows or sets prices based on costs, and these costs may include new investments. The regulator therefore examines and 'allows' investments to be part of the cost base and to justify an increase in prices. These can occur even where infrastructure investment is subsidised or largely financed by governments.

Public transport in Sydney provides an example of an independent regulator influencing funding requirements in land transport.

⁵¹OECD *Economic Surveys Australia 2010* p96.

⁵²Examples of arguments in favour of an independent (planning) body are in Infrastructure Partnerships Australia *Meeting the 2050 Freight Challenge*, June 2009, Australasian Railways Association, *A single national land transport economic regulator*, December 2010 and submissions to Infrastructure Australia from the Australian Logistics Council and the on the national freight network strategy.

⁵³See: ACIL Tasman, *Energy network transmission planning The emerging role of the Australian energy Market Operator*.

⁵⁴See: *Australian Rail Track Corporation submission on the review of the National Transport Commission*, and Rob Albon and Su Wu, *Economic regulation of rail infrastructure – Design and process across OECD countries*.

There, the Independent Pricing and Regulatory Tribunal makes maximum fare determinations based on a proportion of the efficient cost of service, where those costs include capital investments. The remaining costs are paid by government.⁵⁵

Some stakeholders have raised questions about the possibility of a single national regulator for all land transport, including road, rail and intermodal, with responsibilities including access, safety and economic matters. There may be concerns about the co-location of safety and economic regulatory functions if the level of subsidy were affected by decision making. Also consideration may need to be given to differences between the current negotiate and arbitrate approach for rail access charges, and whatever system might be applied for new forms of road charges. The coverage of such regulation, for example, for all rail and/or all roads, would also need to be addressed.

The above discussion on institutions focuses largely on a fixed formal relationship between public and private parties regarding infrastructure use and provision. This could be a subset of possible arrangements for advancing freight policy. Broader arrangements have attracted attention in the United States in relation to objectives such as how to increase the visibility of the importance of freight to the community.⁵⁶

Road charges for trucks

At present, a significant difference between rail and road is that vehicles on rail pay charges negotiated between a floor relating to marginal cost and a ceiling, which are directly related to infrastructure costs. In comparison, road charges are set by governments, are nationally uniform, and are largely 'indirect' and unable to be negotiated.

In April 2007, the Council of Australian Governments agreed to a Road Reform Program that may lead to a new approach to direct heavy vehicle road pricing / charging and funding. The Program is looking to develop a feasibility study of direct charging by 2011, and has established a project office to advance this. Important questions include whether it is practicable to set direct charges by routes, road classes etc.⁵⁷

A report on road reform to the Council of Australian Governments by the Australian Transport Council in 2009 argued that current road charging and funding arrangements are incapable of meeting policy objectives, yet there are only a few successful network-wide examples of direct road user charging systems. The less complex distance charging schemes are generally applied only on major routes. The Australian Transport Council also expressed concern regarding jurisdictional incentives to accommodate freight growth on roads.

The Australian Transport Council recommended that externality charges not be considered in the Road Reform Program at this time.

⁵⁵Independent Pricing and Regulatory Tribunal, *Review of CityRail fares 2009-2012*, December 2008.

⁵⁶National Cooperative Freight Research Program, *Institutional Arrangements for Freight Transportation Systems*, Report 2, 2009.

⁵⁷Details are available at <http://www.roadreform.gov.au/Home.aspx>. In the current paper, the term *direct road charging* relates to payments associated with the direct cost of using roads such as mass or distance charges, as distinct from indirect charges such as fuel taxes.

Rather, it argued that the merits of national charging treatments of externalities should be re-examined after the introduction of location based road charges. For these purposes, congestion was regarded as a form of externality.⁵⁸

The Australia's Future Tax System report supported acceleration of the road charges feasibility study. In the context of a detailed examination of road transport taxes it made a number of findings and recommendations relevant to direct charging of heavy vehicles and investment in roads including:

- there is a need for asset management plans to assist in setting a cost base on which charges can be assessed
- on routes where road freight is in direct competition with rail that 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
- there are arguments for and against recovering the total costs of the road system from road users. Marginal cost pricing is considered most economically efficient; however, such prices are unable to cover the cost of road provision.⁵⁹

The Future Tax System report further recommended economic assessments of road investments, and a National Road Transport Agreement to guide the use and supply of road infrastructure. A single institution would develop and monitor implementation of reforms, including matters such as a model for financing the road network; a regulatory framework to, for example, prevent overcharging or supply restrictions; consistent arrangements for asset management, and a framework to support commercial agreements between road users and road infrastructure providers.⁶⁰

More recently, the Council of Australian Governments Road Reform Program has issued a number of reports and updates of its progress. These include a policy framework reference guide and a pricing options discussion paper which consider an approach of charging heavy vehicles directly for marginal and/or allocated costs. The options paper sets out a proposed approach to modelling the feasibility and benefits of various direct charging systems.⁶¹

The Road Reform Program is targeting the issue of: a lack of direct charging potentially resulting in road owners seeking to protect their existing assets through prescriptive regulations or access restrictions. This problem may extend to maintenance and renewals. It might be considered a road 'use' issue. The Road Reform Program process may also lead to greater long term certainty for asset owners about funding sources.⁶²

Comments on the pricing options discussion paper have suggested that direct charging or related mechanisms should also refer to 'supply' reform and other matters.

⁵⁸Australian Transport Council, *COAG Road Reform Program Phase 1 Report*, May 2009.

⁵⁹*Australia's Future Tax System final report E3. Road Transport Taxes*, December 2009.

⁶⁰A similar proposal was made in: Allen Consulting, *Options for improving the integration of roads governance in Australia The role of Local Government* August 2009.

⁶¹Council of Australian Governments Road Reform Program *Policy Framework Reference Guide*, July 2010, National Transport Commission, *Heavy Vehicle Pricing Options, Development and Assessment Framework Discussion Paper*, 4 August 2010.

⁶²For example safety, oil dependency and carbon pollution, state regulatory frameworks, rail, the role of Treasury and infrastructure and supply reform. See <http://www.roadreform.gov.au/>

A further issue identified in the framework reference paper concerns changes to infrastructure, including, for example, expansions, improvements etc which might be considered a 'supply side' or road provision matter. This is of considerable interest to a national land freight network strategy and it is possible that significant productivity gains are available from reform in this area. The Road Reform Program proposes to release a discussion paper on supply side issues in early 2011.⁶³

The OECD Economic Survey 2010 argued for acceleration of the Road Reform Program. It suggested that in parallel with this program thought should be given to overhauling the framework for managing and financing roads to make the supply of road infrastructure services more market driven than under the current budget-management approach.⁶⁴

Much of the discussion to date seems to assume that road charges would be set. Reasons include elements of public goods in road provision, atomistic users and economic efficiency occurring with charges set at marginal cost. It is assumed that such charges, levied by or for the road owner, would be subject to economic regulation. A further implicit assumption may be that the asset owner identifies and undertakes investments, and these investments are assessed for 'validation' as part of the cost base for pricing under economic regulation. The process for identification of investments, and improvements to roads, is a key issue for any national land freight network.

In comparison, rail line charge negotiations may, but are not mandated to, result in charges above marginal cost. It is not only train operators who may negotiate access to rail lines. For example, in some railways, customers such as coal mines can hold access rights, negotiate charges and seek improvements to infrastructure. Where trains compete with heavy vehicles, the ability of infrastructure owners to negotiate charges in excess of marginal cost is limited. Parties other than the rail line owner are able to seek investments in the rail network, although such parties would be expected to pay for such investments. This means that freight operators and their customers are able to directly influence the rail network.

There have been proposals for negotiations on road freight charges, similar to what occurs in rail, and possibly under an access undertaking offered by the road owner. It has also been proposed that the Australian Competition and Consumer Commission could oversee such undertakings. As this is a role it already has in relation to the Australian Rail Track Corporation's network, the result would be the same entity regulating most mainline rail access pricing and road infrastructure pricing, however, the structure of prices might differ.⁶⁵

Part of the interest in direct road charging relates to how revenue is linked to spending (or investment). The Australia's Future Tax System report noted:

'A key issue is that Australia's roads belong to many different jurisdictional owners. There is little or no link between road revenues and the road owners. The road owners do not receive the economic rewards from road investment.'

⁶³ Road Views, COAG Road Reform Newsletter, December 2010.

⁶⁴ OECD Economic Surveys Australia 2010 at pp 99-103.

⁶⁵ Australian Rail Track Corporation submission on the review of the National Transport Commission, March 2009.

As a result, road investment is largely determined by the competition for the use of tax revenues rather than efficiency criteria.'

National ports strategy

In January 2011, the Commonwealth released a proposed national ports strategy for consideration by the Council of Australian Governments. It included a number of specific recommendations for port related infrastructure. Given that this infrastructure is used for significant freight tasks on networks, these recommendations are relevant to a national land freight network strategy. In its communiqué issued on 13 February 2011, the Council of Australian Governments 'endorsed the need for a national ports strategy..... (and)..... asked the relevant Ministerial Council to complete an implementation plan for a final national ports strategy by August 2011 for out-of-session endorsement by COAG'.

6. Case for a national land freight network strategy

Productivity imperative

The extent to which Australia can achieve its economic potential will be determined by productivity.

Any national land freight network policy for Australia should increase national productivity, compared against international benchmarks, be durable and positively contribute to community safety, amenity and the environment. It should support the Australian Government's vision of a stronger and fairer Australia, more able to meet the challenges of the future. It should support and accelerate the national regulatory changes for transport already being progressed by the Australian Transport Council, to develop market oriented directions more deeply in freight transport.

A starting point for most analysis of industry specific productivity, including freight productivity, is that market mechanisms, in which goods and services are freely exchanged, tend to lead to optimum results. Industry productivity may be constrained by market imperfections; where market mechanisms are weak or absent, or where there are market failures. Policy advisers therefore look to sources and evidence of market imperfections, and identify whether market mechanisms can be improved.

Freight productivity constraints

At present, the characteristics of the market in which freight operates suggest productivity is constrained because:

- there is no market for the use of roads or for the provision of roads
- decisions taken outside a market framework, including about land use and access to transport networks, are impacting freight activities
- there are market failures related to information asymmetries, returns to scale, public goods, and externalities.

Roads and market mechanisms

The absence of a market mechanism for freight regarding roads relates to three primary matters. Firstly, there is no direct payment from heavy freight vehicles for the efficient cost of the road infrastructure they use. Secondly, freight vehicles have no 'property rights' in relation to the road infrastructure services they use. This means that freight has no direct commercial influence over the quality or availability of road infrastructure services, or over road investment. The risk arising is that infrastructure provision may not match the freight task, constraining productivity.

The situation of roads in relation to these two matters is unlike most other infrastructure, including railways and utilities. Users of other infrastructure make payments to infrastructure owners, regulated to efficient price levels, in exchange for rights of use and rights of improvement.

Thirdly, most road infrastructure is shared between cars and trucks. Like heavy vehicles, cars generally do not make direct payments for their use of road infrastructure. Road investments may be fully utilised by cars even if the intention was to cater for freight.

Decisions taken outside a market framework

The level and pattern of freight reflects the location of freight generating activities such as factories, sea and air ports, mines and warehouses. Governments control the location of such activities through planning regulation. Governments control the locations of transport infrastructure through transport planning, and this affects freight routings.

Governments also control the location of residential development, and as such developments can be incompatible with freight activities, residential approvals may operate to constrain freight. This is most relevant in urban areas and locations where freight is growing strongly.

It is generally recognised that greater integration of land use and transport planning is desirable. The Council of Australian Governments' capital cities strategic planning agenda includes reference to transport corridors, international gateways, productivity and global competitiveness, all of which are directly related to freight.

Other government decisions for freight relate to allowing heavy vehicles access to transport infrastructure. On many rail lines, access decisions can be determined independently by a regulator such as the Australian Competition and Consumer Commission. However, road access decisions are not subject to such processes. While the Council of Australian Governments has agreed to establish national mode specific regulators, there is no agreement that the road regulator would deal with access.

Other non-market decisions impacting freight include statutory provisions for passenger priority on railways. These place freight at a disadvantage compared with personal transport, a disadvantage which is largely not addressable via commercial mechanisms.

Market failures

Market failures can include information problems, returns to scale, public goods and externalities.

There is potential for information problems to undermine supply chain coordination and increase costs. This potential is more likely to increase with the number of parties, including the number of infrastructure service providers, in a supply chain. It also is likely to be higher where several supply chains rely on a single piece of infrastructure. A further information problem relates to the interaction of uncertainty about the future and the long lead times needed for major infrastructure to come on stream.

Returns to scale relate to the potential for monopoly behaviour and are most relevant to infrastructure service provision. Monopoly behaviour is regarded as deleterious to productivity, and mechanisms to have outcomes more in accord with a freely functioning market include access regimes, independent economic regulation of prices and service quality, and public benchmarking of performance against international practices. Such techniques have been applied in aviation, shipping and rail lines, but generally not to roads.

Public goods refer to the inability to exclude others from consumption, and the potential for excess demand. This is an issue in roads for freight, especially when car use of road capacity is not priced.

Freight externalities are a significant issue such that a major theme of several reports has been to identify ways in which the adverse impacts of a growing freight task might be addressed. Externalities include congestion, global greenhouse gases, local amenity issues, and accidents. They can give rise to community disquiet about freight, which may place a limit on freight productivity. Externalities differ by locality and by mode. Although difficult to quantify they are thought to be larger for road than for rail or shipping. The Productivity Commission has argued that there is a particular need for further research into transport externalities.

Consequences of market imperfections

The consequences of these market imperfections may be greatest where:

- there are the largest and most intense freight activities and flows
- large scale personal transport tasks share infrastructure with freight
- infrastructure is used for many freight tasks
- there is rapid growth in freight transport, and in personal transport
- the freight flows and activities adjoin residences.

Evidence of problems caused by these market imperfections includes:

- inability to use the most productive freight vehicles on transport infrastructure
- urban encroachment of freight tasks
- congestion
- uncertainty about the future adequacy of capacity for freight
- inability to finance potentially necessary infrastructure.

Calls to address the problems include creation of new national organisations for regulation or planning, intergovernmental agreements regarding roads, publication of formal plans, and funding.

The proposed national ports strategy directly targets urban encroachment and uncertainty about future adequacy for sea freight and other port tasks. It does so by seeking three levels of published long term plans for each major port; precinct, region (catchment area) and jurisdiction. Plans are to refer to the capacity of channels etc, and of the main road and rail connections to the port, taking into account expected vessel and vehicle sizes.

Current concerns

Most stakeholders consider that it is important to have a new national land freight network strategy. The current approach is inadequate in terms of scope or timing to meet the freight challenge. However, there is less agreement about the detail of such a strategy.

Many issues have been raised in consultations. These include:

- vehicle access, interoperability
- land use considerations such as corridor preservation, residential buffering
- existing bottlenecks
- identification of a future network, and principles for such a network
- connection to major freight generators/transfer points such as ports
- interfaces between network and other infrastructure
- hard and soft infrastructure, asset management, skills, competencies and qualifications
- economic cost of infrastructure use, including charges and mode neutrality
- financing, including opportunities for private financing
- bodies to develop policy, to plan, and to regulate.

Safety, including occupational health and safety is also a key issue in transport and for community acceptance of enhancements, and any options to increase transport productivity should recognise the need to improve safety.

Options

Three broad options for addressing the productivity imperative outlined below are:

1. current approach
2. a full transport market
3. a hybrid approach.

Current approach

The current approach relies on jurisdictional specific policies, with national agreement on a number of matters. Generally, freight and personal transport are treated together, for all infrastructure, on a mode specific basis.

A number of new national reforms are underway. These aim to address a partial market – payment of heavy vehicle charges directly to road agencies and national approaches to a limited range of regulation.

They do not address completion or correction of a whole national transport market, for example, rights of heavy vehicles, payment of light vehicle charges directly to road agencies, the matter of heavy vehicle access, or independent road regulation. Implementation of agreed reforms is slow.

Continuation of the current approach is unlikely to yield real outcomes.

Full transport market

A full transport market would see transport infrastructure access, including for road, determined and priced in an independent process on an efficient cost basis. Such costs would include costs of capacity and externalities such as congestion. This would apply to personal transport as well as to freight. This would help to assure the neutrality of road, rail and shipping.

There are theoretical and practical difficulties with the necessary cost estimation particularly outside the most intensely used infrastructure. Governments have not indicated support for road congestion pricing, or for the pricing of rail passenger priority, which is needed for this approach to be effective.

Hybrid approach

A hybrid approach would involve more progress toward a complete transport market than that currently under consideration, but not to the extent of universal road pricing. It would seek to address issues regarding land use and route planning that are not dealt with by a market.

It would focus on freight which, as a commercial activity, is directly influenced by market forces. It would only apply to a limited network of the most important routes and places for freight, including sea ports and airports. This is the idea of a national land freight network strategy.

Case for a national land freight network strategy

There currently is no integrated strategy for the national transport of freight. A national land freight network strategy could assist in ensuring that rail and road freight infrastructure planning and investment are jointly improved and are not undertaken in isolation from each other.

The identification of a national land freight network would start address thematic issues such as best use of infrastructure; integration of freight and land use planning; providing certainty about capacity for growth; and responsiveness of infrastructure to economic demand.

The essence of any freight network is that it should 'add' something – analysis, priority, rights and responsibilities - for freight which is not available off the network. The rationale for providing these matters should be stronger on such a network than elsewhere as productivity and social gains are most affected by the network.

Limiting the scope of a national land freight network strategy to a tightly defined infrastructure network (at this time) is needed for tractability and to allow assessment of options including for what may need to be done or 'reserved' for the future. The adequacy and needs of major flows, route and nodes - a core network - is a logical starting place. As land transport is used by most freight, land infrastructure is a logical focal point. Such an approach dovetails with the proposed national ports strategy which focuses on the principal freight nodes of significant sea based supply chains.

Implementation of a national land freight network also provides an opportunity to engage with the community at a high level to support the progress of freight policy, and for enduring reform.⁶⁶

The proposed national ports strategy identified that there are few published port and related transport infrastructure plans, but that publishing such plans would be an important step in highlighting freight issues before planning decision makers. Existing Commonwealth and jurisdictional documents for roads, rail and shipping are important, however, there is no national land freight network strategy.

An alternative approach to reform argues that establishment of institutions, with relevant mandates, is more important. A strict focus on institutions would imply that there is little point in developing a 'strategy'; rather, the strategy would be to establish institutions which would then undertake planning and other functions. Under this approach a national network would set the authority of institutions.

Two significant questions about such a national land freight network strategy are: how would interfaces be dealt with? and what should happen in the interim, before such a network is established?

Interfaces need to be carefully addressed, but should not undermine or delay the provision of a network. While interfaces can give rise to complex matters there has been some success in dealing with them in national networks including in transport.

An important policy 'interface' is with the proposed national ports strategy. The ports strategy deals with sea and land side issues regarding ports.

⁶⁶Allen Consulting, *National Freight Network Strategy Background paper*, February 2010 at: <http://www.infrastructureaustralia.gov.au/publicsubmissions/nfnp/published.aspx>

The national land should be an extension of appropriate elements of the ports strategy to landside routes and places which are not primarily sea freight related. The port and other routes generally adjoin, and this enables full 'visibility' and complementarities of the various freight modes; sea, air, rail and road.

Consideration and development of a national land freight network should not delay worthwhile investment and reform proposals. The network should support and accelerate necessary reforms. Therefore, while it is in development, Infrastructure Australia will continue to seek and consider worthwhile infrastructure project proposals that add to national productivity through freight. Infrastructure Australia also strongly supports speedy implementation of the reforms already agreed by the Council of Australian Governments, and development of further essential reform proposals.

7. The concepts underpinning a national land freight network strategy

Freight constraints

At a pragmatic level, easing freight constraints would advance the objective of increasing national productivity while paying due regard to safety, amenity and the environment.

Significant freight constraints include restricted use of infrastructure; encroachment of freight activities; uncertainty about capacity for growth, and the responsiveness of infrastructure to freight economic demand. The national land freight network strategy concept to address these constraints is shown in Table 7.

Table 7: Concept approaches through a national land freight network

Constraint	Concept approach – to be applied to a national land freight network
Restricted use of infrastructure	Identify, by network segment, reasons for restrictions on use of interoperable high productivity vehicles ⁶⁷ . Identify what action needs to be done to alleviate such restrictions, and include in an initiatives 'pipeline'. Assess merit of undertaking relevant actions. Costs of actions to allow access to be paid by freight.
Encroachment of freight activities	Establish an indicative long term plan, linked to those for ports, cities and state freight plans. Include in the plan the preservation of options routes/ corridors/sites for interoperable high productivity vehicle use. Include freight aspects in land use plans, especially through the National Charter of Integrated Land Use and Transport Planning.
Uncertainty about capacity for growth	Build on planning envisaged in the proposed national ports strategy. National level, agreed forecasts and scenarios of freight demand and freight/ personal vehicle use of the network and its segments. Identify what may need to be done to cater for demand, including use of newer technologies such as smart infrastructure. Assess merit of undertaking relevant actions, with reference to freight volume.
Responsiveness of infrastructure to freight economic demand	As an addition to infrastructure pricing / charging agenda, create the ability for the freight sector to finance and gain benefits from infrastructure, but subject to not unduly affecting other parties or the community.

⁶⁷For the purposes of this discussion paper, high productivity vehicles include long, double stacked etc. trains with appropriate axle weights and other dimensions, and for high productivity trucks: B triple or super B double (for containers) both at higher mass limits.

The network on which these constraints would be addressed would be defined by physical infrastructure comprising roads, railways and exchange/transfer points such as major ports, airports and intermodal terminals.

It would include relevant 'soft' networks such as information monitoring and control systems, and collaborative/competitive arrangements between stakeholders in the logistics industry.

Addressing constraints through a national land freight network

A national land freight network, building on the proposed national ports strategy, would provide a focal point for industry and all levels of government to jointly seek to address constraints and underlying market imperfections. Some constraints can be addressed now, with immediate productivity benefits. For others, a start can be made, but productivity benefits may lag.

Already a number of processes are underway that partly address the identified constraints. These include some jurisdictional freight strategies, existing programs, national regulators, Australian Rail Track Corporation investment strategies, and the Council of Australian Governments' strategic city planning agenda and Road Reform Program. Infrastructure Australia's preferred options to build on these reforms and address these constraints are set out below.

Restricted use of infrastructure

There are claims that current limits to the interoperable access of high productivity vehicles, including vehicle dimensions and operating restrictions/curfews, are not justified on some main freight route segments. Easing such restrictions would have an immediate productivity pay-off, reducing the number of vehicle movements, with likely positive impacts on energy consumption, emissions and overall amenity.

Options include:

1. no change to current arrangements. There are ongoing negotiations with asset owners regarding access of high productivity vehicles to infrastructure on main routes; however, these have been protracted.
2. independent review and public report of impediments to allowing access. This would establish the nature of obstacles and identify any infrastructure impediments, for example safety concerns. Such impediments could then be assessed for economic cost effectiveness under the Infrastructure Australia reform and investment framework. Impediments could be addressed under existing processes.
3. independent /appellable decision on access to network. To be effective, the decision maker would need to make a determination in relation to the imposition of costs on beneficiaries. This would require changes in law and government agreement on parameters the decision maker should follow. The Council of Australian Governments Road Reform Program might lead to identification of similar issues, and its next milestone reporting date is at end 2011.

Infrastructure Australia prefers option 2 as it allows for the most rapid network wide progress and may prove necessary were option 3 to be developed. Option 3 is a desirable long term direction.

At a broader and longer term level, infrastructure and technological improvements and benchmarking performance of monopoly infrastructure against international best practice, can be important matters for ensuring best use of infrastructure. Technological improvements that enhance interoperability increase national competitive forces.

Options to address the issues of potential longer term restrictions include:

1. allow the network and its use to evolve under existing arrangements and the potential new policies which may emerge from current processes. This may result in discontinuities in standards and operations at asset ownership boundaries. Neither state access regimes nor the Council of Australian Governments Road Reform Program fully address the discontinuities matter.
2. publish a document/map showing interoperability requirements and seamless access for future efficient vehicle use of the network (at international benchmark levels). The document could build on, but go beyond, existing jurisdiction and Auslink/Nation Building medium term plans. Assessment of potential projects would be a separate matter under Infrastructure Australia's reform and invest framework. Difficulties here may be that the document becomes a wish list and engenders an expectation that governments should 'fund' identified projects.
3. place management of a network under single control. A single owner would be expected to take a network wide view. This would require legislation and/or substantial negotiation among governments. A single owner of both road and rail networks, and of ports etc. may not be practicable and would give rise to competition policy considerations.

Infrastructure Australia prefers option 2, the mechanics of which could be commenced relatively early. Careful development would be needed to overcome the potential for a wish list and unrealistic expectations. This basic option could be supported by implementation of the proposal of the Australia's Future Tax System report for a national road agreement, noting that the report highlighted the key role of asset management. It also would be supported by adoption of 'Vision Zero' principles to demonstrate to the community that the productivity enhancements also improve safety outcomes.

Option 2 could be complemented by a limited consolidation of control of linehaul networks. An obvious candidate would be to focus the Australian Rail Track Corporation on control of the interstate lines with relatively high mixed or general freight traffic densities and the potential for multiple train operators; for example an early inclusion of the main line west of Kalgoorlie.⁶⁸

⁶⁸This would extend beyond the provisions of the Council of Australian Government agreement to consider whether to commission an independent cost-benefit analysis for applying the ARTC access model for the interstate track between Perth and Kalgoorlie; see *National Partnership Agreement to deliver a seamless national economy, implementation plan, competition reforms, infrastructure reforms*.

Encroachment of freight activities

Urban encroachment is one of the most substantial constraints to freight. It leads to community sentiment against freight activities. Encroachment relates to the interaction of freight and land uses. This issue was highlighted in the proposed national ports strategy and also occurs in relation to freight that is not port related.

Given growth in both population and freight, especially in cities, the importance of resolving issues concerning such interactions is likely to increase. Therefore, better integration of freight transport and land use planning is important for productivity, as well as for amenity. Better integration may also assist to address some 'last mile' issues.

Options to address encroachment include:

1. reliance on existing mechanisms, including, for example, the Council of Australian Governments cities agenda. While the cities agenda may be relevant to freight, the current agreement relates to the process rather than the results of planning.
2. freight 'policy veto' on certain planning decisions that may lead to encroachment. This would be difficult to frame and implement, and is wholly reliant on jurisdictions. Such a process may not result in greater community support for the efficient conduct of freight tasks.
3. freight purchase of lands to provide adequate buffers for all existing and prospective operations. This is unlikely to be feasible in cost terms and may encourage perverse behaviour.
4. publication of an indicative strategy document/map showing likely major freight routes and precincts, and reference of this document in relevant jurisdictional planning documents as envisaged in the proposed national ports strategy.

Infrastructure Australia prefers option 4 as it appears to be the most feasible route for progress.

Uncertainty about capacity for growth

There is uncertainty about the long term adequacy / availability of transport infrastructure capacity for freight. This has implications for private investment in freight generating and other activities, and may have implications for the costs of providing infrastructure in the future, for example if appropriate corridor reservations are not made. Influences include the continued growth in demand for use of infrastructure shared by personal and freight transport, and absence of a market mechanism for the supply of road infrastructure services. Infrastructure which is built may be fully utilised by personal transport.

There are a number of medium term freight plans and studies, and national aggregate freight forecasts. However, there is no consolidated Australia wide view as to whether, where or to what degree freight is likely to be constrained in the future, especially on networks used jointly with personal transport.

There also are differences among forecasts and scenarios used for freight analysis, including for important 'external' developments such as potential impacts of demography, industry, energy and climate change. The proposed national ports strategy aims to address these matters in relation to sea freight, however, other major freight flows are at present unaddressed at a national level.

The first order issue here is not about funding. It is about the need for a nationally agreed strategy for meeting the freight challenges and testing its robustness against various scenarios.

Options to address uncertainty about capacity for growth include:

1. continuation of current fragmented approaches. This option does not address the identified issues
2. governments commit to provide adequate capacity. This would be impractical and such a commitment would not be credible.
3. development of a plan that broadly assesses capacity against an independent forecast of demand. This centralises forecasting.
4. development of a strategy that broadly assesses ranges of capacity against demand determining scenarios.
5. development of a plan that includes very detailed project descriptions. This runs the risk of bogging down, and of confusing assessment of initiatives with identification of potential options.

Infrastructure Australia prefers option 4 as it allows for the identification of broad infrastructure needs that are most robust. It also is more likely to engage stakeholders. Such a strategy would need to adopt short, medium and long term horizons and include consideration of prospects to improve infrastructure use such as smart infrastructure technologies. The strategy would need to be developed in collaboration with industry and governments, as these parties hold most relevant information. There are arguments that it should be independent of governments, for example to counter views that its projects would be fully government funded.

Uncertainties may be most significant in urban areas due to the potential for competing land uses. For this reason any approach would need to carefully consider routes, precincts and terminals that serve the major cities.

Lack of responsiveness of infrastructure to economic demand

There appears to be acceptance of the principle that freight should 'pay its way', at least on major routes. A key consideration is tying payments directly to infrastructure costs. As this already occurs in rail, sea, air and terminal infrastructure, the focus is on roads. The Council of Australia Governments Road Reform Program is examining some issues in relation to this.

There remains a question about how demand from freight and freight customers should influence infrastructure supply on main routes. The joint use of infrastructure by freight and personal transport complicates this question.

Options to improve the responsiveness of infrastructure to economic demand include

1. reliance on current processes, such as the Council of Australian Governments Road Reform Program. These processes are not examining mechanisms that allow freight and customers to directly commercially influence road infrastructure supply.
2. government to 'fund' freight projects identified by the freight industry. This may not be adequate for needed freight capacity, and runs counter to current general reform directions. The question of freight priority use of such infrastructure also would need to be addressed.
3. creation of a transport infrastructure (or road) economic regulator to assess and approve investments made by road authorities for inclusion in a charging cost base. Such a regulator would need to take a position on investment costs to be attributed to cars. For investment on mixed use roads to proceed, this position would need to be validated by either direct charges for cars including congestion charges, and/or government funding. Changes in law and substantial issues and negotiations would be needed. If congestion charges or government funds were inadequate, worthwhile freight related investments may not occur.
4. creation of a road improvement regime which allows initiation of investments by the freight industry (or customers). These rights would need to be appropriately constrained, for example like similar rights under the *Trade Practices Act*.

Option 3 has merit and may be a suitable long term policy goal. Infrastructure Australia prefers option 4 at this time since it holds most prospect of early to medium term results. It could be extended to linkages of routes and precincts that were not on a designated national network. Options 3 and 4 are worthy of further consideration to bring forward appropriate short term action.

Criteria for inclusion

Gains from easing constraints are most likely in the places most used by freight – trunk routes, precincts and terminals. National networks in other industries comprise trunk infrastructure, for example the electricity transmission grid. The extension of access and investment rights to roads would align with similar rights in other industries which provide commercial use of nationally significant essential facility infrastructure.

The criteria for inclusion of places and routes in the network should relate to the absolute and relative significance of general or more than one class of freight. Relevant factors are:

- absolute quantum of freight and connectedness to major freight generators
- relative freight task compared with other places and routes, and other traffic on the route.

To deal with growth issues, the network should have prospective elements. It should include places and routes where the criteria are likely to be met. Maps 1 and 2 of this paper show the location of major freight flows in Australia.

A network comprises routes that link. A concern of some stakeholders is that 'omission' of segments from a designated network could disadvantage them. For example arguments are put that the network should cover distributed urban freight, entire supply chains (source of production to point of consumption), and task specific single commodity infrastructure. To an extent, the proposed criteria indicates that they would be. For example, places where a number of relatively small supply chains overlap to form a large freight task may be included. Shipping and bulk commodity chains would be included via alignment with the proposed national ports strategy.

However, dealing with the identified constraints needs to be manageable and practical. While designation of a network does generate 'interface considerations', it is not feasible to attempt to deal with all constraints, current and future, at all places. Similarly the case for freight to resist encroachment and influence infrastructure is much stronger on the routes it dominates.

Building on the national ports strategy

The national land freight network strategy should build on the proposed national ports strategy. Many of the propositions of the proposed national ports strategy apply to the national land freight network strategy, including the requirement for long term planning and ensuring the ability to execute plans.

The proposed national ports strategy made recommendations for governance. There are differences between port related and interstate national supply chains. For example most port related freight remains within a regional catchment, a city, mining province or agricultural area. There are also differences in the market imperfections they face, and current state of national level policies. Therefore, not all of the governance recommendations for ports are directly transferable to the national land freight network.

8. National land freight network strategy outline

Vision, objectives, priorities

The vision for a national land freight network strategy under consideration by Infrastructure Australia is:

'The overarching purpose of the national land freight network strategy is to drive the development of efficient, sustainable freight logistics that balance the needs of a growing Australian community and economy, with the quality of life aspirations of the Australian people.'

The objectives under consideration are:

'to improve the efficiency of freight movements across infrastructure networks, to minimise externalities associated with such freight movements and to influence policy making in areas relevant to freight.'

For a national network, it would be appropriate to set high level long term national goals, such as those set out for the Defined Interstate Rail Network on its identification in 1997. These include:

- high productivity vehicle capability and access
- modern operating procedures, and application of smart technologies
- appropriate levels of separation of personal freight transport in locations in urban areas, including dedicated rail infrastructure
- infrastructure and operational performance indicators, allowing for international comparisons in terms of matters such as asset utilisation, density, transit times, availability and reliability.

Priority actions to effect the above objectives and national goals can be grouped in subject matter areas:

1. identifying a national land freight network
2. planning for relevant corridors and places
3. ensuring plans can be executed
4. freight infrastructure improvement and access
5. governance changes to align with principles.

Subject matters are described in more detail in Appendix 1.

Necessarily, the agreement of the Commonwealth and state/ territory governments will be needed to develop this approach.

Preliminary map

To provide focus to the discussion, Infrastructure Australia proposes the following preliminary map of routes and precincts for the national land freight network.

The map shows a single new national network to reflect an emphasis on potential future freight flows, freight (vehicle) connectivity, ports and settlements. It includes:

- ports such as Kembla, Portland, Abbot Point, Bell Bay and Dampier, and prospective ports such as Oakajee and Hastings
- Canberra and Port Kembla now formally part of the national land freight network
- major airports, some regional airports with important freight tasks such as Rockhampton, Port Hedland and Townsville
- intermodal terminal / freight cluster sites in the capital cities, Gold Coast and Canberra
- rail lines towards the Pilbara and the inland rail route Melbourne-Brisbane/Gladstone
- rail tracks standardized to gauge and train control systems: in Western Australia to Esperance, Bunbury and towards the Pilbara; in Victoria to Portland and Hastings; in Queensland along the coast and to Mt Isa; and through Sydney
- roads to ports, airport and intermodal terminal / freight cluster sites
- completion of urban motorway networks to freight specifications / priority.

The map proposed is not a funding map.

Indicative program list

Given the above, the land network would be defined as one allowing for interoperability of the most efficient freight vehicles between principal nodes for general or several classes of freight. The proposed national ports strategy deals with the seaside.

The principal freight nodes would therefore include:

- nationally significant ports in the mainland capital cities
- nationally significant networked ports in regional centres including Townsville, Abbot Point, Gladstone, Newcastle, Port Kembla, Hastings, Geelong, Portland, Esperance, Bunbury, Port Hedland and Dampier, Geraldton/Oakajee, Darwin, Launceston/Bell Bay
- major international airports and major regional freight airports
- major and new intermodal terminal/freight cluster sites in the cities; Melbourne (western interstate and Donnybrook), Sydney (Moorebank and Eastern Creek), Brisbane: south west (Bromelton etc and north - to be identified); Perth (Kewdale/Forrestfield), and Gold Coast and Canberra (to be identified).

Interoperability would include:

- for rail: engineering standards for 2km train, vertical/horizontal curvature standards, double stack, automatic train control which is urban area compatible, USA type standards for loading gauge/kinematic envelope, and freight priority

- for roads: relevant highway level of service standard, access for high productivity/weight-dimension configurations, compatibility of freight transfer with rail/international shipping, consistent truck communications/routings/pricing procedures
- interoperable communications, vehicle control and information systems, and smart infrastructure technologies
- ability to 'refit' (new) corridors with either road or rail freight configurations – probably governed by rail curvatures
- for shipping: consistent channel and quay configuration for container shipping.

Goals would include:

- availability of a standard gauge freight priority rail line from these principal freight nodes to the designated interstate network
- standard gauge rail tracks/routings in Melbourne (Hastings - Dynon-western interstate terminal), Sydney (Sydney - Newcastle, Southern Sydney Freight Line - Moorebank-Eastern Creek, Port Kembla added to interstate network), Brisbane (Fishermans Islands without curfew-Bromelton – Ipswich - northern Brisbane), that separate freight trains from passenger trains
- expansion of the standard gauge rail network; Inland Rail Route (Melbourne to Brisbane via Ipswich), further rail standardisation in Queensland (from northern Brisbane terminal - Gladstone – Townsville – Mt Isa), further standardisation in Western Australia (Kewdale/Fremantle - Bunbury via Kwinana, Kalgoorlie - Esperance, Midland/Avon - Geraldton, and towards the Pilbara)
- single rail control system (ATMS) or seamless interface with city train control systems (ETCS)
- identification of specific opportunities to develop and embed interoperable smart technology in infrastructure and operations, to enable maximum use of existing and new infrastructure
- greater intermodal terminal capacity in the capital cities with Sydney as a priority, and in major cities such as Gold Coast, Canberra, Newcastle or strategic interchange points such as Albury/Wodonga, Parkes
- high productivity/performance based standards road network for 'national' highways – Goulburn Valley - Newell, Hume – Pacific - Bruce etc (identification of operating impediments to high productivity vehicle access, including local housing/traffic and traffic lights etc)
- town by-passes and grade easing on national highways
- completion of urban motorway networks to freight specifications/priority Melbourne (Peninsula Link, Westlink, north east Melbourne link, Outer Melbourne Ring Road-E6), Sydney (M5 East, F3-M2, M9, M4 if warranted), Brisbane (Gateway motorways, Northern link) Adelaide (Northern Connector) Perth (Gateway WA plus Roe and Leach highway access to ports)

- introduction of dedicated road freight infrastructure where traffic density permits, between capital city ports and intermodal terminal/freight cluster sites
- a second tier of freight roads from jurisdiction designated strategic freight clusters to the national network
- improved safety outcomes embedded in each of the initiatives.

Infrastructure Australia is not recommending that construction of all these matters needs to be done, least of all done now or with funds collected from general taxation. Rather it points to these ideas as being the type of long term programs that could underpin a national network – if volumes of networked freight are sufficiently high - and thus may merit a network context rather than just being considered as one-off projects.

Already Infrastructure Australia has identified national land freight network projects that are ready to proceed and that could be an ideal start to these initial programs. These include Adelaide rail freight (Goodwood and Torrens junctions), Majura Parkway, and the Pacific Highway. Other projects that need to be progressed to ready to proceed status include Western Interstate Freight terminal in Melbourne, north south freight corridors and Green Triangle in Victoria /South Australia. The Moorebank terminal project in Sydney also needs to be progressed as a priority.

Freight off the network

The options under consideration by the Infrastructure Australia have a limited focus. It is important to deal with other issues, including:

- distributed urban freight
- ensuring fit for purpose infrastructure for low density, seasonal and remote freight
- connectivity of major freight generators to the National Network.

While these are not ‘on network’, and may primarily involve local or regional issues, given the importance of freight to national productivity, there is a strong case for a nationally consistent approach to each. Already there are some national approaches to significant rail infrastructure under the national competition policy.

9. Next steps

Implementation

The proposed national ports strategy emphasised the role of jurisdictions especially in planning and in regulation of land uses. This reflected the position of each major port as the natural focal point of the relevant supply chain, and the jurisdictions' influence over ports through ownership etc. Ports are the natural leaders in this space.

Any approach to implementation of a national land freight network needs the cooperation of jurisdictions from high levels on strategic issues through to on-the-ground matters such as data sharing. However, while many organisations have an important stakeholding in the subject matter under discussion, arguably there is no natural focal point at present.

The Australian Future Tax System report recommended a single institution to develop and monitor reforms under a National Road Transport Agreement. While this recommendation did not specifically cover other modes, and was not limited to freight, other recommendations of that report saw some cross-modal consistency of both charging and investment decisions, at least for freight.

Infrastructure Australia will consider comments on this discussion paper prior to formulating advice for governments. This advice will focus in some detail on goals, objectives, strategic directions and key project priorities. In the interim, Infrastructure Australia intends to:

1. take the first steps to commence the national land freight network (as identified in Map 4), by seeking the support of industry, the Commonwealth and jurisdictions for:
 - identification and assessment of current impediments to high productivity vehicle use
 - development of long term agreed freight projections based on a range of scenarios, and the tracking of these scenarios and projections
 - identification of freight capacity constraints that may emerge under these projections
 - advancing the projects in Infrastructure Australia's pipeline to 'ready to proceed' status, and provide appropriate recommendations to government regarding these
 - progressing the matters identified as an initial program (in section 6 above) into projects for consideration in Infrastructure Australia's pipeline
 - development and reporting of performance indicators for monopoly infrastructure.
2. seek the support of the Commonwealth and the jurisdictions for the development and publication by jurisdictions of their own freight plans.
3. seek the support of the Commonwealth and the jurisdictions to develop a road improvement regime, including through pilot studies.
4. continue to seek, assess and progress infrastructure project proposals under the reform and investment framework.

Appendix 1: Priorities and actions

Priority Area 1: Identifying a national land freight network

Overview

The objectives under consideration relate to the efficiency of freight movements, minimisation of externalities and influence in policy making. The national land freight network will provide a focal point to accelerate progress towards these objectives.

Any freight network must connect to and may include freight generating locations. Already there are statements of defined networks, and substantial work on planning in relation to some main road and rail corridors under Auslink/Nation Building and state strategy documents.

A network aims to link places as seamlessly as possible. This includes, but goes beyond, concepts of seamless regulation and 'single paperwork'. A freight network is not the same as the places for which government funding is sought.

The largest and most significant locations of mixed or general freight include the ports serving Australia's major cities and the major industrial and warehousing/distribution locations within those cities. In many cases, bulk goods, such as agricultural products, also are moved over the infrastructure segments. Port related infrastructure and tasks, including shipping, should be included through the ports strategy. The network strategy would complement this. Governments could choose whether other places and routes should also be included.

The national land freight network will promote a single national economy and community. This will be done by identifying a network which will:

- allow use by the most efficient vehicles and efficient operation
- promote interoperability
- allow improvements for the benefit of freight, paid for by freight
- improve amenity, safety and environment
- streamline approval processes
- develop and test major scenarios, for example, demographic, industrial, energy and climate change.

The criteria for inclusion will relate to the absolute and relative potential significance of general or more than one class of freight.

A key improvement principle use of the network by the most efficient vehicles, for example, high productivity vehicles.

A map would show the network and therefore where, after necessary improvements, the most efficient general freight vehicles should be permitted to operate.

Progress towards these improvements would depend on economic and commercial considerations, and not government funding.

Network improvement principles

The national land freight network should be underpinned by network improvement principles. High level principles under consideration by Infrastructure Australia are:

1. network
2. improvement for freight, subject to contribution from freight
3. contribution to overall community benefit
4. robust scenarios.

A first principle is that it should be an Australia-wide network. This would promote a seamless agenda, including, but going beyond, regulatory reform. A seamless transport infrastructure link requires interoperability. Interoperability in this context includes the ability to move a single vehicle completely along the network. Therefore it involves a consistent vehicle 'envelope', compatible vehicle and infrastructure control systems, etc. Changes affecting the network should include a presumption in favour of interoperability. Other matters within this principle include scalability, freight interconnectedness to other infrastructure, and affordability.

A network should be operated efficiently. Competitive market forces encourage efficiency. For monopoly infrastructure, where competition in provision may be weak, economic regulation of supply, access and price can be used as proxies for market forces. For transport infrastructure, where economic regulation is not so extensive, public benchmarking of service performance can be a useful tool to encourage efficiency. Included in matters to be benchmarked could be maximisation of asset use, asset condition, and measures of resilience to natural events such as downtime due to flooding.

A second principle is that the network should be able to be improved for the benefit of freight. Improvements to any transport infrastructure should allow operations to be as modern and efficient as possible. Improvement plans should demonstrate better safety, sustainability and amenity outcomes.

Improvements might not change the arrangements regarding the use of existing infrastructure by other parties. However, policies to change these arrangements should remain open for governments to pursue other objectives, for example emissions or congestion reduction.

Freight should pay its way on the network, and be able to initiate and contribute to the improvements it wishes to benefit from. This would mean that the pace of improvements to the network can be strongly influenced by freight customers.

The third principle reinforces the desirability of improving overall community amenity, safety and environment while conducting the freight task. It is possible that this is best done through some concentration of freight activities and minimisation of vehicle movements.

The fourth principle is that the development of this network should be as robust as possible to potential external-to-transport influences. This would involve scenario testing of matters such as demography, industrial development, energy, and climate change. Such a network may provide a focal point for coordinating freight transport with national level policy assessments such as for population, industrial development, energy and climate change.

In addition to these, the network should be subject to streamlined approval processes and buffering as outlined in priority area 3.

Nomination

Agreement of relevant governments to a national land freight network is needed. A process should include nomination of places and routes and evidence of supporting freight and vehicle flows. Nomination, and acceptance, of itself would have no implication for government funding.

Showing progress

Progress towards improvements on the network, access to the network and increases in freight efficiency should be publicly reported. Infrastructure asset condition, capacity and capability, together with traffic levels (including identification of freight and other vehicles), and relevant performance indicators would be among the necessary details. International benchmarking of infrastructure services should be introduced with a 'scorecard' shown for network places/ segments.

To facilitate this, it is necessary for a reporting body to receive relevant information from jurisdictions, network owners, the freight industry and possibly customers. Confidentiality of private sectors parties' commercially sensitive information may need to be addressed.

Priority Area 2: Completing a strategy

Overview

Infrastructure improvements needed to allow efficient general freight vehicle operations will be shown. This is analogous to the Statement of Opportunities in the national energy markets. The projects identified for this purpose should form an infrastructure pipeline.

Matters related to a national land freight network plan include:

- content
- integration with other plan documents
- staging
- processes to develop the plan
- assistance with planning and forecasting.

Content

A plan will identify potential long term freight needs. It need not assess the merits of resolving those needs. Identification of needs should take into account levels of traffic, vehicle types, efficiency of operation, interoperability, capacity available to freight, and safety and amenity.

Within the 50 year horizon, it may be appropriate to identify potential freight needs and opportunities such as new or future corridors, freight lands, and changes to port functions and locations, routings in or around cities, emerging cities, new technologies. Traffic levels which would make such opportunities viable should be identified.

To avoid this becoming a 'wish list' only those projects/programs which are likely to show substantial economic or commercial viability, and would be critically important in the future, should be identified. Actual commencement of projects should be subject to rigorous evaluation processes, such as the reform and investment framework and assessment methodology used by Infrastructure Australia.

Integration with other plan documents

Strong cooperative action among all relevant parties is needed to develop a national land freight network plan. It should build on, not supplant, existing work. Similar plans are sought for port freight corridors under the proposed national ports strategy. These should align with and join the national land freight network.

A number of high level plans or strategy documents relevant to freight are published or are being prepared.

Infrastructure Australia will ask for publication of formal freight plans by jurisdictions, including the identification and reservation of terminals and corridor and priority access to freight vehicles on certain corridors.

Some published documents although limited to land transport infrastructure can be used to make a start.

The strategy seeks to identify long term freight needs, not merely those projects that parties expect to announce in the short term. The documentation should also identify infrastructure, corridors, and precincts etc. which connect to the national land freight network.

More generally, the national land freight network plan should take into account and build on agreed directions for issues such as technological change and communications/control systems, energy, climate change, community amenity and safety including matters such as the systems approach to safety in transport.

Staging

In most cases, government infrastructure announcements indicate expected dates for projects.

A new approach would be to provide an opportunity to improve infrastructure, and a commitment to allow, but not mandate, such improvements. Governments may choose whether or not to provide funds to projects, or when to provide funds, but the national land freight network strategy would not require that commitment.

Development processes

An option that has been proposed is for a national level body to oversee the development and publication of the plan. It has been suggested to Infrastructure Australia that the independence of such a body from any particular government may be very important if private financing of initiatives are to be sought. The national energy market may provide some analogies.

To fulfil this role, such a body would need to work cooperatively with jurisdictions, asset owners and the freight community.

Forecasting and scenarios

The above process would reveal whether there are significant differences in assumptions behind forecasts. While there is room for debate on such matters, and Infrastructure Australia is not recommending 'centralisation' of forecasting, it is important to understand whether any differences in views have critical implications for planning. The accuracy of forecasts should be tested.

A first step should be the development of base line national projections and agreed major scenarios, for example of demography, industrial development, energy futures, climate change generally and changes in weather events expected under climate change scenarios.

Priority Area 3: Ensuring plans can be executed

Overview

The issue of ensuring that plans can be efficiently executed in a national land freight network are comparable with those for ports.

The national land freight network will form the arteries of Australia's general freight systems. National consistency is essential and governments should work cooperatively to expedite any necessary approvals for improvements to the network.

Recommended actions to ensure national land freight network improvement plans can be executed include:

- a nationally consistent environmental management regime
- use of nationally consistent strategic and streamlined approvals processes
- introduction of 'buffer' strategies in policies and plans
- assessment of the effectiveness of the above.

Priority Area 4: Freight infrastructure improvement and access

Overview

Freight infrastructure pricing and priority is raised in the proposed national ports strategy. Charging for freight use of road infrastructure raises complex issues, including the issue of connectivity to the national land freight network through off-network infrastructure, and the practicality of mixing of freight and passenger traffic.

Actions under consideration include:

- acceleration of the Council of Australian Governments Road Reform Program trials
- network improvement rights
- off-network access issues.

Accelerated trials

There are substantial issues associated with any road pricing framework. These include legal, commercial and engineering matters. The Council of Australian Governments Road Reform Program is examining each of these in relation to freight but essentially for the renewal, and possibly strengthening, of existing roads.

The proposed national ports strategy argued for accelerating trials of the Council of Australian Governments Road Reform Program on the most heavily freight trafficked roads. Such roads should be linked to, or be part of, the national land freight network. This is where road freight activity is most intensive. Trucks may compete with freight trains on the relevant corridors, and it is in these locations that 'competitively neutral' pricing has the greatest potential to address Infrastructure Australia's concerns regarding planning and investment.

More recent advice provided to Infrastructure Australia is that it is unlikely that Council of Australian Governments Road Reform Program trials can be accelerated to conclude before the schedule in 2011. Infrastructure Australia supports the concept of direct charging mechanisms for infrastructure, including roads, where efficient and practicable and thus recognises the importance of the Council of Australian Governments Road Reform Program process achieving the right outcome for direct charging of heavy vehicles.

Network improvement rights

In comparison with a market approach, the road framework currently under consideration in the Council of Australian Governments Road Reform Program does not deal with personal transport, with regulation and user rights, or with all aspects of investment.

Customer rights to improve the national land freight network could provide a demand-pull mechanism to help shape the network in addition to the ability to finance the renewal of existing infrastructure, and thus can be important to investment.

Such rights allow identification and financing of needs by parties other than asset owners which is vitally important from budgetary and economic efficiency perspectives.

Already, under the national access regime of the *Trade Practices Act*, third parties may have rights to seek improvements to most nationally significant essential facility Australian infrastructure. Most general freight railways are covered.

These rights are to 'negotiate and arbitrate' and are initiated by an applicant. Final determination of disputes is with an independent arbiter – the Australian Competition and Consumer Commission. In most cases the party seeking improvements pays for the improvements, and this limits calls to those with commercial merit, while not undermining the business of the infrastructure provider. Such rights occur under the Australian Rail Track Corporation's access undertakings for interstate rail lines. These rights are also subject to limitations such as ensuring safety etc.

Infrastructure improvement regimes raise complex questions. Infrastructure Australia is recommending a thorough exploration of such an option for roads on the national land freight network.

There may be other options for giving freight a greater say over the infrastructure which it supports and which is essential for its efficiency. In any of these, public provision of relevant information about infrastructure performance is fundamental.

Off-network access issues (last mile)

Some of the reservations about the concept of a national land freight network are that it does not cover the transport infrastructure involved in the 'last mile' issue. The last mile includes important productivity constraints.

Access and improvement regime concepts are relevant to addressing these. An underlying issue is community perceptions of freight, consultation and participation in decision making processes. Infrastructure Australia is recommending access and improvement regime options for linking strategic freight areas nominated by jurisdictions to the national network.

Priority Area 5: Governance

Overview

Infrastructure Australia has called for decision making to be integrated across modes. This gives rise to the question of what governance arrangements may best support this.

Governance arrangements should support consistency, transparency and accountability. Clear objectives, measurement of performance, and incentives for good performance are also critical.

Governance in transport includes regulatory reform elements. Infrastructure Australia supports the national regulatory reform agenda agreed by the Council of Australian Governments. It considers that the full and expeditious delivery of this agenda is vital. It would be concerned if agreed reforms were to be delayed, or if further reform proposals were not brought to governments for early decision. A key outstanding issue relates to the investment and supply of road infrastructure services.

Infrastructure Australia has already made some observations about governance, including:

“More consistency will be required in governance in terms of ownership, community service obligations, regulation, planning.....

Concepts for the future could include:

- *Separate management of task-specific railways (for example the Hunter coal chain)*
- *Unified governance of Australia’s general freight railway under the Australian Rail Track Corporation, particularly the line to the west of Kalgoorlie and the line to the north of Sydney...⁶⁹*

Advice and decision making

Several parties have recommended establishment of a transport commission or similar body. This echoes previous calls. The Australian Transport Council has at times considered such ideas but decided not to proceed. One of the reasons is understood to be reluctance for decisions regarding funding to be made by a non-jurisdictional body.

A fundamental method to address this issue would be the introduction of a complete transport market for infrastructure. In such a market, the investment which is necessary for freight is identified by market participants including asset owners or customers, is validated by an economic regulator, and is financed by user or beneficiary charges. Identification might be assisted by a ‘network manager’ which provides a statement of opportunities for investment using various scenarios as is the case for the national energy market.

Governments are not required to play an ongoing role of grant funding necessary investment. Such a market is most feasible on a national network.

⁶⁹Infrastructure Australia, *Getting the fundamentals right for Australia’s infrastructure priorities*, July 2010, at p36-37

Another mechanism for addressing this issue would be separating responsibility for providing advice about strategic investment opportunities in an integrated network from the responsibility about decisions related to funding.

Rail

Rail governance has moved towards a national network since the 1970s, with major advances in the mid 1990s. The more recent changes are welcomed by industry and considered to be one of the major improvements in transport policy post federation. This provides important lessons for long term governance of the national land freight network.

The Australian Rail Track Corporation initiative is a very significant success because it takes a national network transport view, rather than a local, jurisdictional or even Commonwealth view. However, the Australian Rail Track Corporation has not been allowed to fulfil its original brief in some respects and has taken on an extended role in other respects. There remain risks of discontinuities in the network used by general and mixed freight and in operations across asset ownership boundaries. There is a good case for the Australian Rail Track Corporation to take control of those standard gauge mainlines used for mixed or general freight with relatively high traffic densities and the potential for multiple train operators; for example an early inclusion of the main line west of Kalgoorlie.

A discussion of a national land freight network in Australia must include consideration of standardisation of the main rail lines used for general freight.

Some regional networks in jurisdictions are under private ownership or control, with some having performance criteria established by government. Such networks have very different characteristics to those of the interstate mainlines and' given low densities and therefore little prospect of above rail contemporaneous competition. Also, railways with very high single commodity volumes have different operating and economic characteristics to those of the interstate rail lines.

Road and cross modal

The situation of multiple road owners and multiple funding sources for roads is quite different to the model of control and funding of the main rail national routes by a single entity. The report on Australia's Future Tax System put forward recommendations regarding a national agreement on roads and how this might be led.

The Productivity Commission suggested that cross modal issues in land transport are best addressed through efficiency principles, such as users and suppliers directly facing economic costs, appropriately regulated and applied to each mode. Given the relative scale of the road task, its more substantive governance recommendations were for roads.

Questions have been raised about the possibility of a single national regulator for all land transport.

Other stakeholders have raised considerations about coastal shipping and aviation. Key issues are how investment in infrastructure for these modes can be identified, assessed and integrated across all modes.

Identification involves planning; ascertaining the adequacy of capacity against scenarios to understand where bottlenecks may occur. This is a significant and complex task for a network.

Assessment is about comparing options, including with costs. Assessment should be made on an economic basis and the 'first best' approach is for users to be faced with costs of investments. This already has the potential to occur for all modes except roads. Roads face several issues including freight beneficiaries not directly bearing investment costs, car users not directly bearing costs, and costs and access not being determined by an independent economic regulator. Further regulatory reforms for roads should address these impediments.

In the absence of such reforms, or in the interim, other options include a single national road network manager, and explicit and transparent treatment of funding including that which is related to community service obligations.

Public benchmarking of infrastructure service helps to improve efficiency where economic regulatory structures are incomplete.

Terminals

There are private intermodal terminals in Australia, including some owned by the major rail transport operators. Given the role of governments in planning, and the need for pairing of some terminals, for example, rail siding lengths, governments need to develop a position on the location, ownership and operation of terminals.

There is evidence of a strong need for substantially increased intermodal terminal capacity in the capital cities, especially Sydney and Melbourne. A focus of governance arrangements, and of planning and project development arrangements, must be to expedite such development and ensure that there is no undue urban encroachment onto viable potential sites.

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