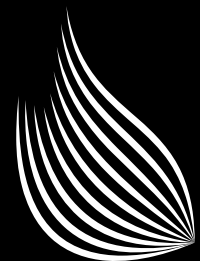


Strengthening Queensland's supply chains

2013-2015

Strategic and operational recommendations to improve
the development and sustainability of efficient and
productive supply chains in Queensland.



QTLC

QUEENSLAND TRANSPORT
AND LOGISTICS COUNCIL

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REPORT PREPARATION

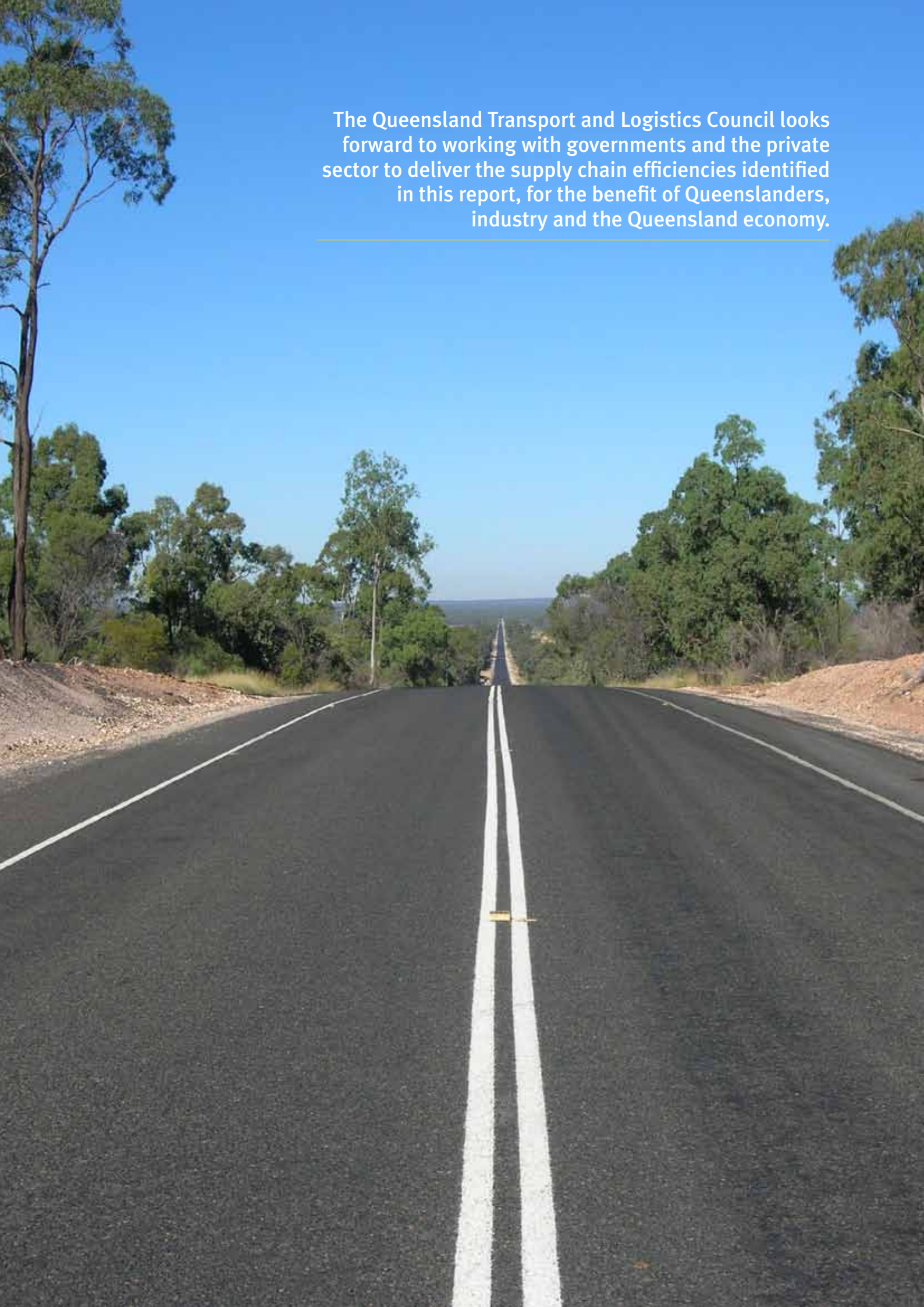
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The Queensland Transport and Logistics Council looks forward to working with governments and the private sector to deliver the supply chain efficiencies identified in this report, for the benefit of Queenslanders, industry and the Queensland economy.





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EXECUTIVE SUMMARY

Efficient supply chains are good for Queenslanders, the Queensland economy and our environment.

The Queensland economy comprises a higher proportion of agricultural, mining, manufacturing, construction, trade and transport industry sectors than any state other than Western Australia. These sectors comprise more than half of Queensland's \$280 billion economy and are serviced supply chains which generate freight movement. The freight tonnage carried in Queensland is larger than in New South Wales and Victoria. With the ongoing prosperity of Queensland reliant on productivity of these economic pillars, clearly supply chains matter.

Objective

The QTLC has commissioned this project to seek "Strategic and operational recommendations to improve the development and sustainability of efficient and productive supply chains in Queensland." This project presents industry viewpoints about how the State and Local Governments in Queensland can increase supply chain efficiencies and security for the benefit of all.

The QTLC intends to submit the report to the Queensland government and conduct bi-annual reviews of progress made in addressing the issues and implementing the recommendations.

Scope and Approach

This report aims to make strategic and operational suggestions to ensure supply chains in Queensland are efficient, productive and sustainable. It critiques complex and sensitive freight and logistics supply chain issues for the whole-of-Queensland and by major corridors for such factors as:

- industry and key supply chain freight movement data
- freight demand, now and in the future
- modal matters
- regulation and reform
- infrastructure planning
- investment and charging models.

This document aims to bring together existing knowledge of Queensland freight transport and logistics, the reports of others, and the previous working group outputs, to form a critique with a prioritised series of strategic and operational recommendations for the Queensland Government. The draft report was forwarded to a range of government and non-government freight and supply chain stakeholders, and this final report incorporates the comments received.

The report acknowledges Government's constrained funding environment, so generally does not advocate major infrastructure projects.

It is appreciated that some of the suggestions for facilitating efficient supply chains are already being expedited by government. In this case, government will know it has industry support for these measures. Other priorities which industry considers important may not be being addressed. This may be because government has not recognised their important contribution to efficient supply chains, or within government it is not clear how factors interact to impact supply chains. In other instances, state entity viewpoints may be influenced by a particular policy, legislative or budgetary consideration which has not been reviewed for some time.

The priorities focus on increasing supply chain efficiency without reducing safety and are in the context of the Queensland Government 'four pillar' objectives and constrained investment outlook.

The key principle used in preparing the report is making more efficient use of available capacity. A second principle is making best use of the funds available so assessing and allocating funding from a whole-of-state program and benefits viewpoint, rather than a 'best practice' project perspective. In this way, this report intends to propose approaches and make recommendations for unlocking latent efficiency.

Next Steps

The report suggests priorities for action and audit in the short term (one to two years) and for information of the state and local governments in the medium term (three to five years) and long term (six to 10 years).

The Queensland Transport and Logistics Council (QTLC) intends to submit the report to the Queensland Government, for a discussion and response to each short term priority. Following the response, the QTLC seeks the establishment of a whole of government/industry implementation working group.



The QTLC as steward

The QTLC is a cooperative industry and government advisory body that provides advice to industry stakeholders and state and federal governments on the development, planning, regulation and operation of freight and logistics transport, infrastructure and services in Queensland.

As the peak industry body representing the views of the freight transport and logistics industry, the QTLC advocates for the provision of infrastructure, regulation and policy that will support sustainable supply chains in Queensland.

The QTLC supports the efficient movement of freight in order to support sustainable and productive economic development and prosperity by pursuing:

- appropriate and ongoing investment in supply chain infrastructure
- integrated regional and urban planning frameworks that secure land for current and future freight corridors
- an access policy and regulation environment that facilitates productivity and innovation
- efficient integration and linkage of freight and logistics systems across the whole supply chain.

QTLC members are individuals and organisations across the whole supply chain including:

- freight forwarders
- freight transport operators and companies
- road, rail, air and sea port and terminal owners, managers and operators
- road, rail, sea and infrastructure providers
- other institutions and companies with a direct interest or role in freight transport and logistics.

Similar to the position taken by the Australian Logistics Council in The National Strategy for the Transport and Logistics Freight Industry, 08–15, the QTLC considers it is the steward and not the owner of this report. Delivering the report priorities must be a joint effort of state and local governments, the QTLC, and the transport and logistics industry.

This report will allow the QTLC to influence the strategic policy agenda of the three levels of government in Queensland, and report back to its stakeholders on freight and logistics reform progress.

Key findings

The National Land Freight Strategy Update (NLFS) identifies four constraints on freight productivity and options to address them.

- **Restricted use of infrastructure:** identify reasons for restrictions and plan actions with funding to be borne by freight.
- **Encroachment of/on freight activities:** long term planning and preserving actions.
- **Uncertainty about capacity for growth:** better, targeted planning.
- **Responsiveness of infrastructure to freight demand:** enable the freight sector to initiate and fund infrastructure that doesn't impact on third parties.

This report finds that Queensland has significant issues with each of these four areas. This constrains Queensland's freight productivity and, in turn, impacts its economy and long-term prosperity.

The QTLC has identified transport related blockages that impact on efficient and productive supply chains and suggests low cost, innovative and systemic responses.

PRIORITIES FOR ACTION

Recommended actions are focused on those of a low cost, innovative, systemic nature with multiple supply chain benefits, unlocking latent efficiency and capacity in the existing freight system.

In this summary, the five key priorities for action are presented. The key priorities are those without which it will be difficult or not possible to fully realise the benefits from the remaining suggested priorities.

1. The Queensland Government does not have a senior executive accountable for supply chain efficiency and freight transport, even though more than half its Gross State Product (GSP) of \$280 billion is directly affected by supply chain efficiency. New South Wales has recognised this issue by appointing a Deputy Director General, responsible for delivering this function only. The equivalent position in the Department of Transport and Main Roads (TMR) is also accountable for strategic planning and policy, passenger and freight planning. A Deputy Director General (DDG) position does not require a large staff, but the authority and requirement of the government for working with the private and public sector to drive delivery of the priorities suggested in this report. Other priorities relate to establishing stronger private public sector arrangements that can assist.
2. There is a distinct lack of supply chain and freight data in Queensland, as Chapter 2 describes. No state agency has developed a whole-of-Queensland commodity model for freight demand with a forecasting capability. Nor is such a model linked to a multi-modal corridor freight transport model. New South Wales recently developed such a capability. Developing the model required collaboration across government departments and the private sector. It would also require the private and public sectors to be more open and transparent about their freight data, particularly for the rail mode, than currently. The use of commercial in confidence clauses reduces knowledge, governance and optimal funding allocation for the best investments. New South Wales used its model to overcome these issues and inform actions in their draft NSW Freight and Ports Strategy. This type of strategic model in Queensland would be invaluable in identifying freight volumes and flow according to commodity and region, assessing the capacity of the freight network and identifying future demand. A more detailed discussion of the benefits of a Queensland Strategic Freight Model is described in sub section 3.3.3.

RECOMMENDATION

It is recommended the Queensland Government create a Deputy Director General position in the most appropriate department that can deliver supply chain efficiency utilising the resources of state departments, local governments and the private sector.

RECOMMENDATION

It is recommended the Queensland Government fund and require the urgent development of a Queensland Strategic Freight Model as described.

3. The former Queensland Government legislated to give passenger trains, whether heavily patronised peak hour Citytrains or heavily subsidised Traveltrains, priority over all freight trains. This has direct operational and network efficiency impacts. This report has suggested that a new Rail Network Operational (Efficiency) Policy be developed and referenced by legislation and supported by the development of operating guidelines to reduce delays and increase network efficiency. Reaffirming the existing policy setting will improve the performance of rail based supply chains.

RECOMMENDATION

It is recommended the Queensland Government develop a Rail Network Operational (Efficiency) Policy, be developed and referenced by legislation to increase rail supply chain efficiency, along with other necessary actions.

4. Over the last decade state departments and the Brisbane City Council have produced different Priority Road Freight Routes with different hierarchies, criteria and determinations as discussed in section 6.3. Contrastingly, all rail lines have been accorded the same priority irrespective of demand. Without developing a whole-of-state approach that is sensitive to local government and land use factors, and assisting local governments to incorporate planning through a statutory planning Instrument, Priority Road Freight Routes will not be protected from land use encroachment, local governments will not use the hierarchy to nominate their Priority Road Freight Routes and ‘last mile’ issues will persist.

RECOMMENDATION

It is recommended the Queensland Government develop a three level Priority Road Freight Route hierarchy, criteria and land use business rules for each level, and determine, desirably using the proposed Queensland Strategic Freight Model, which state-controlled roads meet the criteria. The Queensland Government should also develop a Priority Road Freight Statutory Planning Instrument and facilitate local government adoption in planning schemes with appropriate funding.

5. The constrained funding of governments is recognised. Throughout the report, suggestions have been made within this context. Several instances of reducing funding for high cost matters and transferring the saved funds to imperatives have been made. Four key factors for driving greater supply chain efficiencies are the Queensland Government requiring and demonstrating:
 - 5a. increased transparency and openness about the quantum of funding for different transport initiatives, particularly for rail, and the benefits to different parties of the former government arrangements
 - 5b. increased collaboration between the private and public sectors
 - 5c. increased collaboration across government departments and local governments
 - 5d. a willingness to explore the complex and sensitive issues using better data than is currently available.

The QTLC looks forward to working with governments and the private sector to deliver the supply chain efficiency benefits identified in this report, for the benefit of Queenslanders, industry and the Queensland economy.

RECOMMENDATIONS FOR ACTION

-
1. The Queensland Government continue its development of a Queensland Ports Strategy, recognising the critical importance of well-managed ports for regional export supply chain efficiency. p 21
-
2. The Department of Transport and Main Roads (TMR) enhance and make better freight flow information publicly available by:
- collecting and using data from other agencies such as the Department of State Development, Infrastructure and Planning, the Department of Agriculture, Fisheries and Forestry and the Department of Natural Resource and Mines as well as local governments and the private sector for key mining and agriculture industries to improve the development and availability of consistent and reliable freight movement information
 - working with the New South Wales and Northern Territory agencies to determine the road and rail freight flows crossing the Queensland border
 - developing a rail freight map that specifies volumes and flow (similar to the road freight map). p 29
-
3. The Queensland Government give high priority to developing a whole of Queensland Strategic Freight Model of at least equivalent capability to the New South Wales SFM. p 37
-
4. TMR develop a scope, business plan and host options for a QFSM within three months.
- The QFSM, similar to the NSF, be developed within 12 months. p 38
-
5. TMR investigate the potential for a Western Australian style beneficiary-pays blockage investment model in Queensland, in consultation with the QTLC, DSDIP, Queensland Rail and others to ascertain if there is a role for it to improve the efficiency of supply chains and support for its implementation. p 43
-
6. The Queensland Government, in consultation with Queensland Rail and other potential beneficiaries such as the agriculture sector, consider a relatively low cost infrastructure investment trial to increase the capacity of the Western System in proximity to Toowoomba with a viewpoint to increasing agriculture, mining and energy freight on rail in accordance with its four pillars policy.
- Government require that a new policy be developed so that freight data on rail lines where government provides funding, including through transport service contracts, be made public to meet openness, transparency and governance criteria. p 46
-
7. The Queensland Government, in consultation with stakeholders, develop a supply chain coordination framework and function, suitable for multi-modal corridors. p 47
-
8. TMR, in collaboration with QR, review legislated passenger train priority with a view to seeking increased rail network efficiency and delivering overall benefits for Queensland and Queenslanders. p 54
-
9. TMR, in consultation with QR and affected parties, develop a Rail Network Operational (Efficiency) Policy incorporating freight line, passenger and freight train hierarchies and use these to develop a rail operations trade off decision-making framework. p 54
-
10. The Queensland Government review its legislated priorities to appropriately reference the Rail Network Operational (Efficiency) Policy. p 54
-
11. TMR direct all rail planning to be based on the proposed Rail Network Operational (Efficiency) Policy. p 54
-
12. TMR investigate the demand and financial viability of proposed intermodal terminals including costs and benefits for increasing rail freight utilisation and efficiency between central and northern Queensland, metropolitan Brisbane and its port and act to protect suitable sites in planning schemes. p 56
-
13. The Queensland Government appoint a high level private-public sector Advisory Board, independently chaired, to facilitate transparent restricted access vehicle (RAV) systems, processes and decision-making criteria to better balance freight efficiency and economic objectives, productivity, with asset preservation and road safety. p 60

14.

TMR should, independently of the National Heavy Vehicle Regulator (NHVR), establish its own priority infrastructure for RAV approval and route access by RAVs, based on best practice in other states.
p 61

15.

TMR review its high productivity vehicle (HPV) access processes to include efficiency, safety, economic and sustainable objectives as outlined, along with asset preservation and HPV safety for access assessment criteria.
p 62

16.

TMR review its permit processes and act to deliver the administrative process improvements, transparency and appeal rights as noted in this report.
p 63

17.

TMR consider its permit delivery mechanisms to ensure the number of permits is reduced consistent with the risks of the RAV/HPV/oversize over-mass (OSOM) access sought.
p 63

18.

TMR and NHVR liaise to ensure there is no duplication of administrative assessment processes.
p 63

19.

TMR to procure the necessary enabling technology to improve the efficiency of the RAV access management processes.
p 63

20.

TMR and the NHVR only consider a full-cost recovery model for RAV HPV access applications when efficient assessment processes and systems have been developed.
p 64

21.

The Queensland Police Service investigate the transfer to TMR of the police escort function for large OSOM supply chain input movements, providing TMR can achieve the same performance level, with no reduction in safety but a reduction in OSOM movement and police costs.
p 64

22.

TMR develop its Priority Road Freight Route (PRFR) planning along the lines used in the Toowoomba Sub-Regional Transport Strategy.
p 68

23.

TMR incorporate, if feasible, its PRFR planning into the Statutory Regional Planning program.
p 68

24.

TMR support the Austroads Freight Program developing a research project/s to facilitate national consistency and transparency in PRFR criteria, determination and mapping of PBS capacity for each section of the PRFRs determined to guide planning.
p 69

25.

The Queensland Government to work with the QTLC, its stakeholders and the Local Government Association of Queensland (LGAQ) to develop, using transparent freight demand criteria, a single, multi-modal, multi-level freight Priority Freight Route Policy and Network for Queensland and its regions.

This will ensure PRFRs can:

- be included in, and protected by, local government planning schemes
- inform HPV access
- be operated to facilitate freight flows
- appropriately prioritise, plan and fund infrastructure for freight flows.

As part of PRFR planning, Queensland needs to plan and then develop special OSOM routes with dimensions to be established, but in the range of 10m, 10m, and 40m, for the movement of project cargo and plant for mining, energy and agriculture sectors.
p 71

26.

The Queensland Government to develop an Statutory Planning Instrument (SPI) for PRFRs in consultation with local governments, and ensure PRFRs are integrated into local government planning schemes, so that PRFRs can be included in, and protected by, local government planning scheme processes.
p 72

27.

The Queensland Government focus TMR and Department of State Development Infrastructure and Planning (DSDIP) on developing a package of land use and PRFR planning guidelines, with advice regarding road design and property access for HML and HPV access, associated PIP preparation advice and sufficient funding to support this.
p 73

-
28. Local governments apply state guidelines for improved industrial and PRFR planning once developed in their planning schemes and Priority Infrastructure Plans (PIPs), including designating relevant local roads at an appropriate PRFR hierarchy level. p 74
-
29. The QTLC, LGAQ and TMR work together to identify where the identification of PRFRs can be supported through RRG planning processes. p 74
-
30. TMR, NHVR and the LGAQ collaborate to modify and implement the PBS Route Assessment Tool (or similar) to support and improve HPV access decision-making on locally controlled roads. p 75
-
31. The Queensland Government designate a lead agency, and resource a Deputy Director General position to be accountable for integrating supply chain and freight efficiency, as is the case in New South Wales. p 79
-
32. TMR conduct a supply-chain-based, commercial investigation of the potential for, and possible location of, a north Brisbane intermodal terminal as outlined in section 7 and in section 5.2. p 80
-
33. TMR and/or Brisbane City Council investigate the potential for better connectivity through low-cost, fit-for-purpose roads to increase the resilience of Brisbane's road freight network, resolve potential safety risks, identify where they could be supplied, and seek public and private sector funding for their delivery. p 88
-
34. TMR investigate the potential for an automatic train signalling system to provide a value-adding approach to more efficient use of Brisbane's rail network capacity. p 89
-
35. TMR give high priority to developing a Heavy Vehicle Access Strategy and Investment Plan for at least a 10-year horizon, using the latest road freight data to help prioritise works. p 94
-
36. TMR incorporate the Rail Network Operational (Efficiency) Policy approach and matters raised during the QTLC NCL Rail Forum in its North Coast Line Study. p 94
-
37. TMR engage with the QTLC to investigate supply chain benefits and necessary works for extending type 2 road train and level 4 Pbs access between Roma and Charters Towers along the Inland Freight Corridor. p 98
-
38. TMR and DSDIP investigate the benefits, impacts and costs of a coastal shipping service for the Brisbane-North Queensland corridor in consultation with the QTLC, its stakeholders and the relevant ports. p 99
-
39. The DSDIP consider landside access, encroachment and supply chain efficiency in developing the Queensland Ports Strategy. p 100
-
40. The Queensland Government consider whether a supply chain coordinator would add value and lead to enhanced private and more efficient public investment in the Brisbane to North Queensland corridor. p 100
-
41. The Queensland Government and Australian Government align their desired functions, design standards and planning for the proposed West Moreton System range crossing in the vicinity of Toowoomba.
- Perhaps this could be accomplished through a planning study along the lines of the SEQ Capacity Study or the potential North Coast Line study. p 106



42.

The Queensland Government review the need for its subsidised Westlander Traveltrain service, providing that a comparable or improved bus service to the affected communities can be provided. p 106

43.

Queensland Rail develop a master plan containing interim costed proposals to increase capacity on the West Moreton System in the vicinity of Toowoomba. p 106

44.

The Queensland Government review the commercial and economic opportunity for a short haul rail service from west of Toowoomba to the Port of Brisbane for the grain commodity market and whether this could attract a new rail entrant to Queensland's market. p 106

45.

The Queensland Government and Australian Governments collaborate to develop a suitable option and a business case as a basis for aligning funding for the Toowoomba Range Western Freight Corridor, comprising a second road range crossing and ring road in the vicinity of Toowoomba, to unlock the supply chain efficiencies of Toowoomba, the Surat Basin, north-west Queensland and north-west New South Wales. p 107

46.

TMR and Toowoomba Regional Council collaborate to fund connection of its arterial and local roads to the Toowoomba Range Western Freight Corridor. p 107

47.

TMR develop and implement an OSOM plan to enable supply chain inputs to develop the Surat Basin development that is safe and acceptable to the affected communities. p 107

48.

The Queensland Government review the need for its subsidised Inlander Traveltrain service, providing that a comparable quality bus service to the affected communities can be provided. p 113

49.

Queensland Rail develop publicly-available infrastructure master plans for the North Coast Line and the Western System, as it has done for the Mount Isa to Townsville system. p 113

50.

The Queensland Government review the role of a supply chain coordinator, establish a policy framework and regulate as necessary. p 114

51.

DSDIP ensures development of the Queensland Ports Strategy encompasses the policy and governance to accommodate landside and seaside planning, operations, funding and enhancement necessary for Queensland's economic development. p 117

52.

The Queensland and New South Wales Governments jointly plan a Border Range Freight Corridor and ensure that it is protected in government strategies and planning schemes, so that the northern New South Wales region can be developed and the reliability of interstate long-haul road transport is guaranteed. p 120



GLOSSARY

ALC	Australian Logistics Council	HV	Heavy vehicle
ARA	Australasian Rail Association	IFSQ	Integrated Freight Strategy for Queensland
ARTC	Australian Rail Track Corporation	IMEX	Import Export
BFMM	Brisbane Freight Movement Model	KPI	Key performance indicator
BHAP	Bruce Highway Action Plan	LGAQ	Local Government Association of Queensland
BMT	Brisbane Multi-Modal Terminal, Port of Brisbane	MITEZ	Mount Isa Townsville Economic Zone
BMUT	Brisbane Multi-User Terminal, Acacia Ridge	MRWA	Department of Main Roads Western Australia
BRFC	Border Range Freight Corridor	Mtpa	Mega tonnes per annum
BSTM-MM	Brisbane Strategic Transport Multi-Modal Model	NFPS	Transport for New South Wales draft Freight and Ports Strategy
COAG	Council of Australian Governments	NHVR	National Heavy Vehicle Regulator
CRRP	COAG Road Reform Plan	NLFN	National Land Freight Network
CTEE	Centre for Transport, Energy and the Environment	NLFS	National Land Freight Strategy Update
DAFF	Department of Agriculture, Fisheries and Forestry	NLTN	National Land Transport Network
DIP	Department of Infrastructure and Planning	NSFM	Transport for New South Wales Strategic Freight Model
DNRM	Department of Natural Resources and Mines	NTARC	National Truck Accident Research Centre
DSDIP	Department of State Development, Infrastructure and Planning	NTC	National Transport Commission
FLCWA	Freight and Logistics Council, Western Australia	OSOM	Over-size, Over-mass
FMM	Freight Movement Model	PFR	Priority Freight Route
GDP	Gross Domestic Product	PIP	Priority Infrastructure Plan
GRA	Greg Rowe and Associates	PBPL	Port of Brisbane Limited
GSP	Gross State Product	PRFR	Priority Road Freight Route
GVM	Gross vehicle mass	PRN	Priority Road Network
HML	Higher mass limit	PTT	Pekol Traffic and Transport
HPV	High productivity vehicle	QCAT	Queensland Civil and Administrative Tribunal
		QSFM	Queensland Strategic Freight Model

QTLC	Queensland Transport and Logistics Council
QTRIP	Queensland Transport and Roads Investment Program
RAV	Restricted access vehicle
RAWG	TMR's Rest Area Working Group
RNIG	State-controlled Priority Road Network Investment Guidelines
SCR	State-controlled road
SEQ	South East Queensland
SEQRP	South East Queensland Regional Plan
SEQSTM	South East Queensland Strategic Transport Model
SFM	Strategic Freight Model
SLA	Statistical Local Area
SPI	Statutory Planning Instrument
TCDP	Transport Coordination and Delivery Program
TEU	Twenty-foot Equivalent Unit
TfN	Department of Transport for New South Wales
TIA	<i>Transport Infrastructure Act, 1994</i>
TIDS	Transport Infrastructure Development Scheme
tkm	Tonne-kilometres
TMR	Department of Transport and Main Roads, Queensland
TORUM	<i>Transport Operations (Road Use Management) Act 1995</i>
TSRTS	Toowoomba Sub-Regional Transport Study
WHUS	Warrego Highway Upgrade Strategy





1.0 INTRODUCTION

1.1 Background

Efficient supply chains are good for Queenslanders, the Queensland economy and our environment.

The Queensland economy comprises a higher proportion of agricultural, mining, manufacturing, construction, trade and transport industry sectors than any state other than Western Australia. These sectors comprise more than half of Queensland's \$280 billion economy and are serviced supply chains which generate freight movement. With the ongoing prosperity of Queensland reliant on the productivity of these economic pillars, clearly supply chains matter.

✦ Objective

With this in mind, the QTLC has commissioned this project to seek 'Strategic and operational recommendations to improve the development and sustainability of efficient and productive supply chains in Queensland.' This project presents industry viewpoints about how the Queensland Government and local governments needs to act to increase supply chain efficiencies for the benefit of all.

The QTLC intends to submit the report to the Queensland Government and conduct bi-annual reviews of progress made in addressing the issues and implementing the recommendations.

On 5 November 2012, the Queensland Transport and Logistics Council (QTLC) commissioned Pekol Transport and Traffic (PTT) to undertake the Strengthening Queensland's Supply Chains 2013-2015 project.

1.2 Scope

The report acknowledges the Queensland Government's constrained funding environment, so generally does not advocate major infrastructure projects. Accordingly recommended actions are focused on those of a low cost, innovative, systemic nature with multiple supply chain benefits, unlocking latent efficiency and capacity in the existing freight system.

This project prioritises important aspects for Queensland's supply chains within the context of its freight system. Its scope does not include all matters of national freight reform. It also concentrates on landside supply chains, including acknowledging the importance of ports.

✦ Aviation

Although the aviation mode has a crucial role in moving high-value, urgent freight – such as agricultural food exports, medical supplies, industrial supplies and express post/parcels – it is not considered within this project.

✦ Supporting national initiatives

Entities responsible for developing national initiatives include:

- Infrastructure Australia
- National Transport Commission, National Heavy Vehicle Regulator and National Rail Regulator
- Australian Logistics Council.

Their work informs and influences that of the states and each other.

The QTLC is supportive of all initiatives that align with its objectives for strengthening Queensland's supply chains and improving their efficiency. However, because there is limited benefit from reviewing or restating the range of initiatives suggested, this report only considers initiatives with direct relevance to the project objectives.

1.3 Report layout

Chapter 2 of the draft report outlines the current and future demand for transport by Queensland's supply chains. Key aspects of the national and state freight policy are outlined in Chapter 3. Landside modal contestability and interim investment frameworks form Chapter 4.

Queensland's rail freight policy is critiqued, with recommendations identified in Chapter 5, and its road freight policy similarly addressed in Chapter 6. Regional supply chain corridors are described, along with their challenges, opportunities and priorities in Chapter 7.

Chapter 8 summarises the recommended priorities and outlines an approach for implementation and ongoing review.

The Executive Summary summarises the projects' suggestions with an emphasis on the short-term priorities that will do most to strengthen Queensland's supply chains.

2.0 DRIVERS OF FREIGHT

This chapter provides an economic context for the remainder of the report. It also illustrates that the differences in state and territory economies directly influences the size and nature of their freight tasks.

Except where referenced, all information in this chapter is sourced from the Centre for Transport, Energy and the Environment (CTEE) 2012 reports, which quantify Australia's and Queensland's domestic and international transport task, energy use and emissions produced for the 2009/10 financial year. The CTEE has been producing the Australian and State Transport Facts series for more than a decade. These are generally considered the premier independent information source by the national and state agencies which fund it.

The CTEE is an entity of Pekol Transport and Traffic (PTT). It is also the custodian of the historic data, processes and models reported annually and provides 19-year forecasts of freight transport growth by mode.

Further information can be referenced from: www.ctee.com.au.



2.1 The Australian and Queensland economies

Queensland has Australia's third largest economy and population, as shown in Figure 2.1. In 2012, its population of 4.66 million produced a Gross State Product (GSP) of \$280.6 billion, or approximately \$60,000 per person. Its GSP was 18.4% of Australia's \$1,451 billion GDP and its population 20.4% of Australia's 22.85 million people.

For comparison, the state and territory share of GDP by industry division for the financial year ending June 2011 is presented as Figure 2.2.

Inspection of the two figures indicates there is reasonable stability in the size of the state economies and the proportion of their industry sectors, as would be expected. This similarity provides support for the following descriptions of freight generating sectors.

With the exception of Western Australia, Figure 2.1 shows the Queensland economy comprises a higher proportion of agricultural, mining, manufacturing, construction, trade and transport industry sectors, coloured in red and yellow hues than any other state. It also has a lower proportion of those industry sectors coloured green and blue.

The freight task is different for each of the industry sectors. Those indicated by the red and yellow hues produce significant freight transport demand. Those coloured green and blue produce a comparatively smaller freight demand. This is reflected by CTEE data showing that, on a jurisdictional (tonnage) basis, Western Australia and Queensland each account for about 25% of the national figure, with New South Wales and Victoria contributing 23% and 17% respectively.

Figure sources page 19: CTEE sources ABS Catalogue 5220.0 Australian National Accounts, 2011-12, for financial data and Access Economics Estimates for population. Notes: 1. ABS advises new and revised national estimates and any updated revisions impact on all states depending on the differing state weights affected by any revisions. This means previous year comparisons are only valid when using the same catalogue time series.

Figure 2.1: STATE AND TERRITORY SHARE OF GDP BY INDUSTRY DIVISION FOR 2011/12

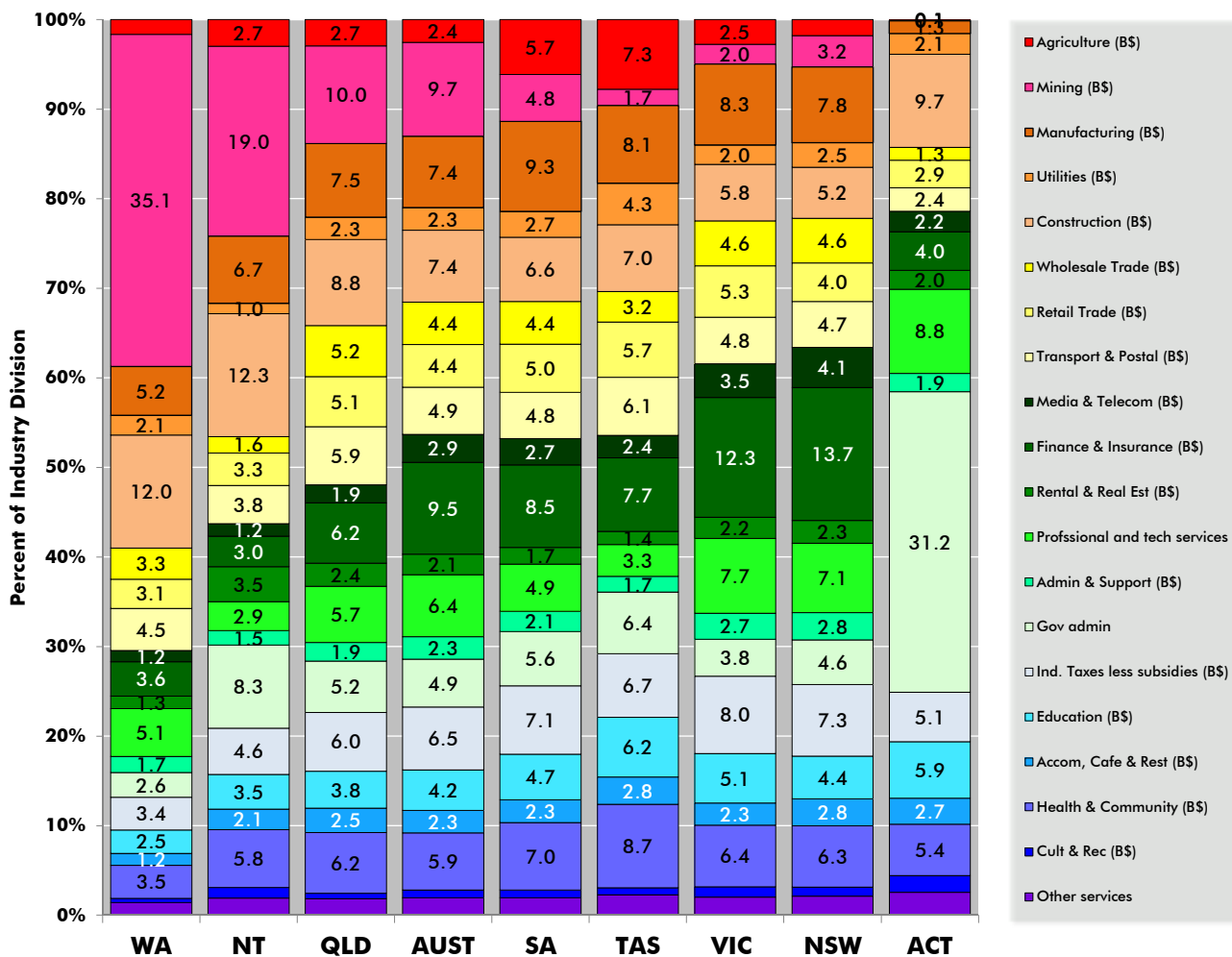
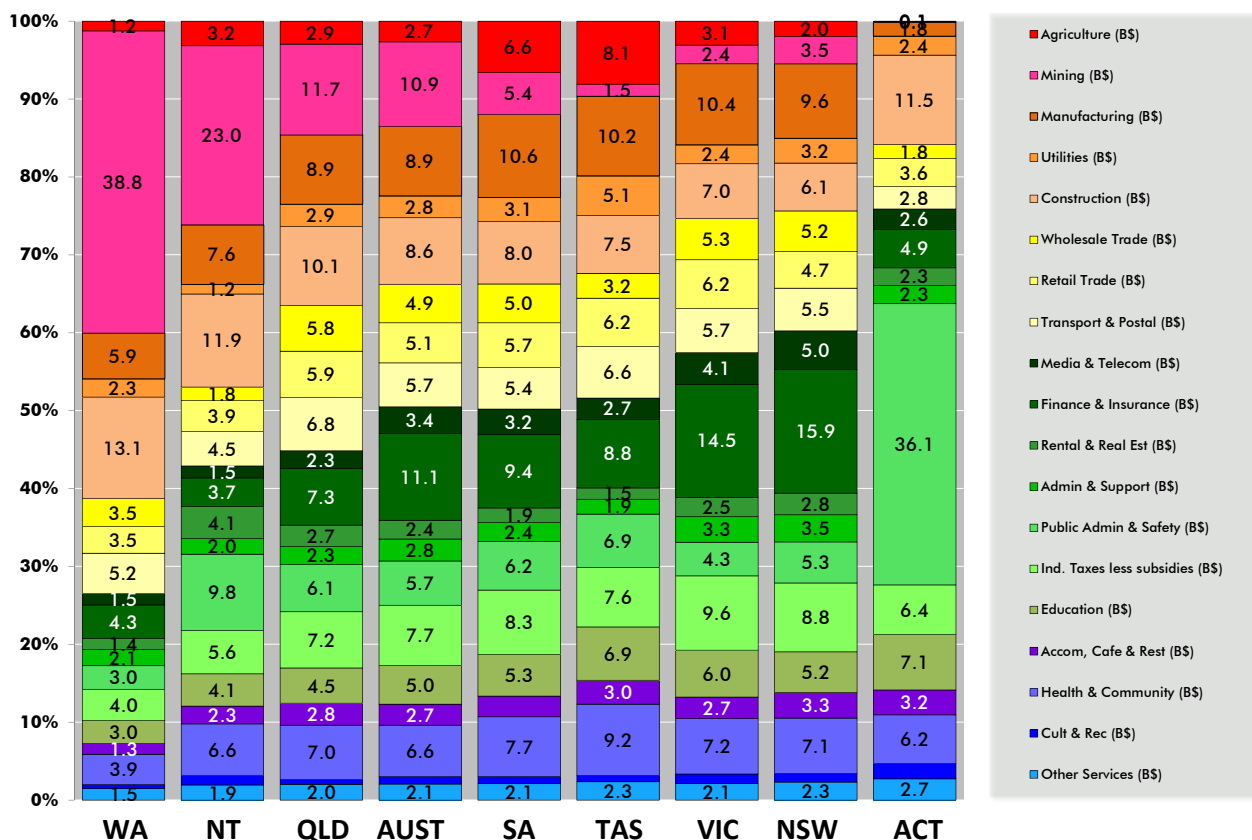


Figure 2.2: STATE AND TERRITORY SHARE OF GDP BY INDUSTRY DIVISION FOR 2010/11



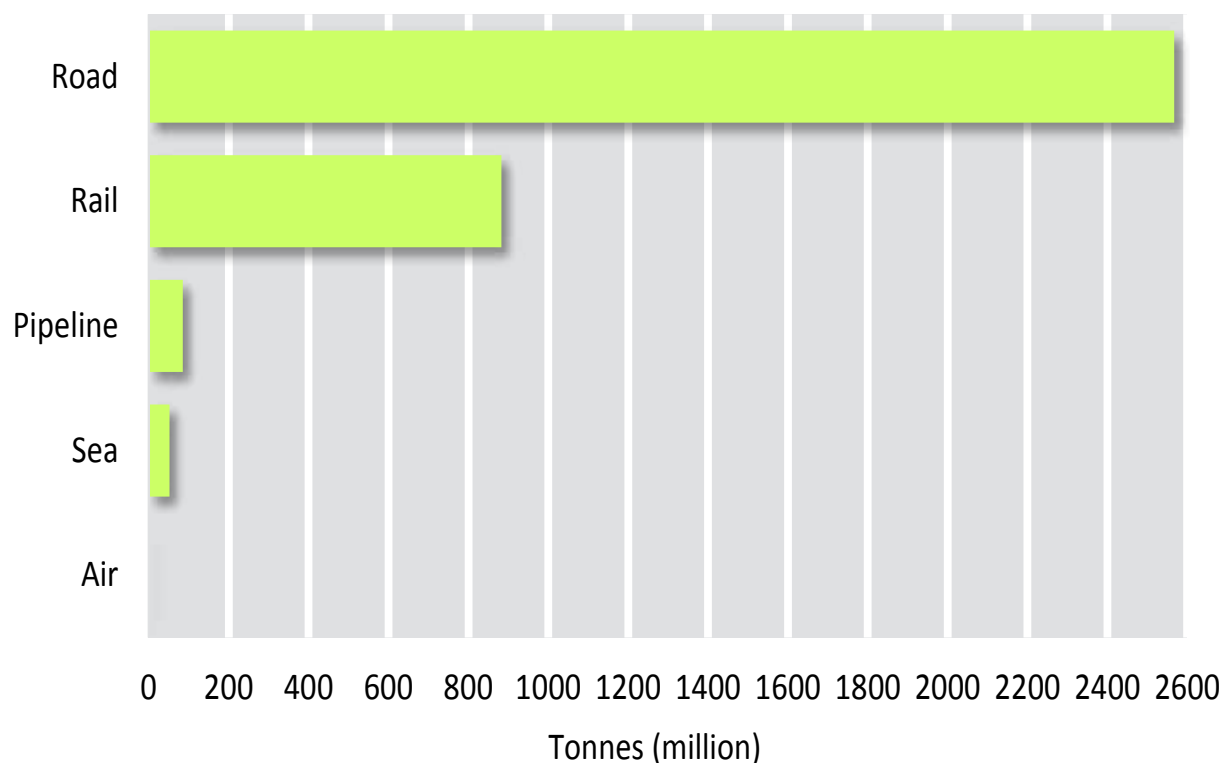
In addition, the type of freight and the mode and vehicle/rolling stock used is very different across the industry sectors. As a result, the different proportion of industry sectors within Australia's states and territories (as shown in Figure 2.1) produces profoundly different state freight tasks.

This impacts the scope, extent, type, modal propensity and management of the state and territory freight tasks, which vary considerably by region throughout Australia. Given the variations in state and territory (and regional) industry sectors and geographies, each state and territory should have different priorities for addressing freight growth.

➔ 2.1.1 Freight movement in Australia by mode

In 2009/10, the amount of freight transported within Australia grew by 5.0% to reach 3.59 billion tonnes. The share of freight transported by road was 71.6%¹ with a further 24.6% by rail, as shown in Figure 2.3 below. (Note that Figure 2.3 is for Australia, and that it refers to freight volume rather than the freight task, which is expressed in tonne-kilometres.)

Figure 2.3: AUSTRALIA'S DOMESTIC FREIGHT TASK BY MODE



¹ Pipelines catering for the next largest share (2.4%), followed by sea (1.5%).

➤ 2.1.2 National freight and ports policy context

A key context for this report is the significant national policy research conducted by such entities as Infrastructure Australia and the National Transport Commission, among others. These two entities seek to drive a national agenda for freight reform across roads, rail and ports in the domains of governance, pricing, access and infrastructure.

Typically, these agendas are complex and sensitive, and the states manage many aspects. Even so, states can be influenced over time by federal strategy and funding initiatives progressed through COAG.

✦ Ports policy agenda

In 2011, COAG endorsed the National Ports Strategy, which was authored by the National Transport Commission (NTC) and Infrastructure Australia. While primarily a national ports strategy for Australia's bulk and container ports, it noted the function of general purpose ports and cruise terminals. The latter is not considered in this report.

The National Ports Strategy posits that Australia's ports and landside logistics chains face major challenges from the forecast growth in trade, with Australia's bulk exports and metropolitan container imports being expected to double in size every 10 years. As well as growth, safety is a key issue, and ports must meet national interest requirements for defence, security, biosecurity and border protection.

In Queensland, many major ports are government-owned entities that are leased for long periods or, in the case of the Port of Brisbane, privatised. The QTLC understands that the major ports are already, as suggested by the National Ports Strategy:

- updating their regulatory and governance frameworks to increase effectiveness
- working in consultation with the Queensland Government to improve land planning and corridor preservation
- concentrating on planning future road and rail landside infrastructure requirements².

From an infrastructure viewpoint, ports may be privately or publicly owned, whether the latter is under lease arrangements or a government-owned corporation.

The ports operational perspective is different as the National Port Strategy states.

Queensland ports effectively operate as public/private sector partnerships between the port managers, the private sector stevedores and the landside transport operators, so collaboration is essential. Optimal private investment depends on all governments providing certainty about their intentions on provision and use of port lands, and road and rail systems.

While there are a number of Queensland ports, the capabilities of all are managed to respond to their freight function. Some can be considered to be single commodity ports. For example, only four ports have container handling capabilities, and three of these are at least 500 kilometres apart. Developing new ports requires extensive planning, approvals and investment. In other words, there are huge barriers for entry.

From a supply chain and transport logistics perspective, these characteristics mean that the cost to shift an import or export supply chain from one port to another, even if the necessary landside network was available, may be prohibitive. For corridor-based supply chains, there is typically only one port available.

The efficiency of ports is therefore a national concern. The National Ports Strategy requires the states and territories to each develop their own ports strategy. The QTLC is well placed to work with the Queensland Government in its development of the Queensland Ports Strategy, in order to increase the efficiency of export supply chains.

RECOMMENDATION

1. Queensland Government continue with its development of a Queensland Ports Strategy, recognising the critical importance of well-managed ports for regional export supply chain efficiency.

Other Queensland port and maritime matters are discussed in various parts of Chapter 7.

² Note: the National Land Freight Strategy Update proposes that the National Land Freight Network places more emphasis on landside port connectivity, and this is intended to be implemented through COAG.

★ Landside policy agenda

All of Queensland’s supply chains are affected by the efficiency of the landside freight system. Infrastructure Australia has initiated national reform for landside freight systems through the National Land Freight Strategy Update (NLFS), June 2012. The NLFS states the four constraints on freight productivity and options to address them:

- **Restricted use of infrastructure:** identify reasons for restrictions and plan actions with funding to be borne by freight.
- **Encroachment of/on freight activities:** long term planning and preserving actions.
- **Uncertainty about capacity for growth:** better, targeted planning.
- **Responsiveness of infrastructure to freight demand:** enable the freight sector to initiate and fund infrastructure that doesn’t impact on third parties.

This report acknowledges Queensland has significant issues with each of these four areas, which constrain Queensland’s freight productivity and in turn impact its economy and its citizens’ wellbeing.

The reduction in supply chain efficiency poses a number of challenges. The priorities and opportunities to address them are developed firstly on a whole-of-Queensland basis, then by supply chain corridors.

Importantly, the NLFS and the National Ports Strategy require jurisdictions to produce freight and ports strategies by 2014 to guide long-term planning, governance and investment.

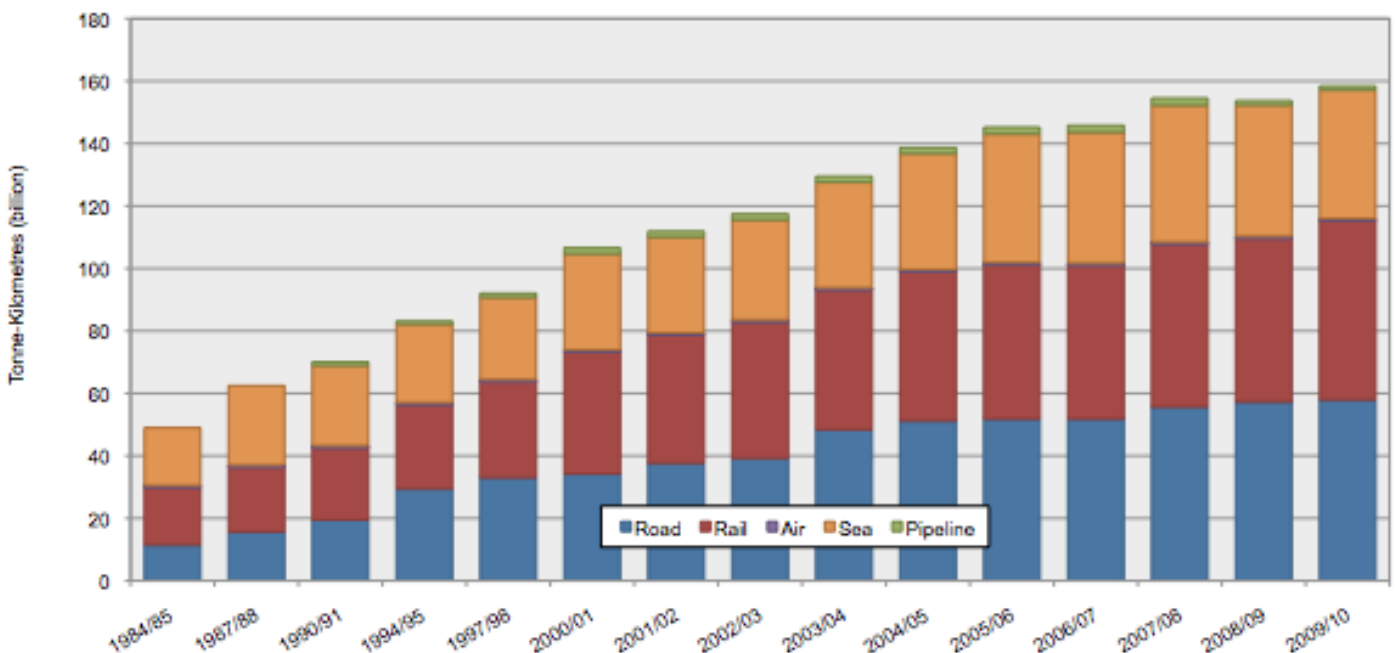
The next section outlines how the Queensland road and rail freight task is forecast to grow.

2.2. Growth in Queensland’s freight movement

The data source used in this sub-section is the CTEE’s Queensland Transport Facts 2012, for which the base year is 2009/10. This section outlines growth in Queensland’s freight task, including by mode. It illustrates the impact of the global financial crisis for the three years to 2009/10, then provides CTEE forecasts of freight growth for the next 10 years for the rail, road and maritime modes.

Figure 2.4 shows the Queensland domestic freight task by mode and in tonne-kilometres, annually, for the last 10 years and for five discrete years beforehand. In 2009/10, Queensland’s domestic freight task was 154 billion tonne-kilometres (tkm).

Figure 2.4: QUEENSLAND’S FREIGHT TASK



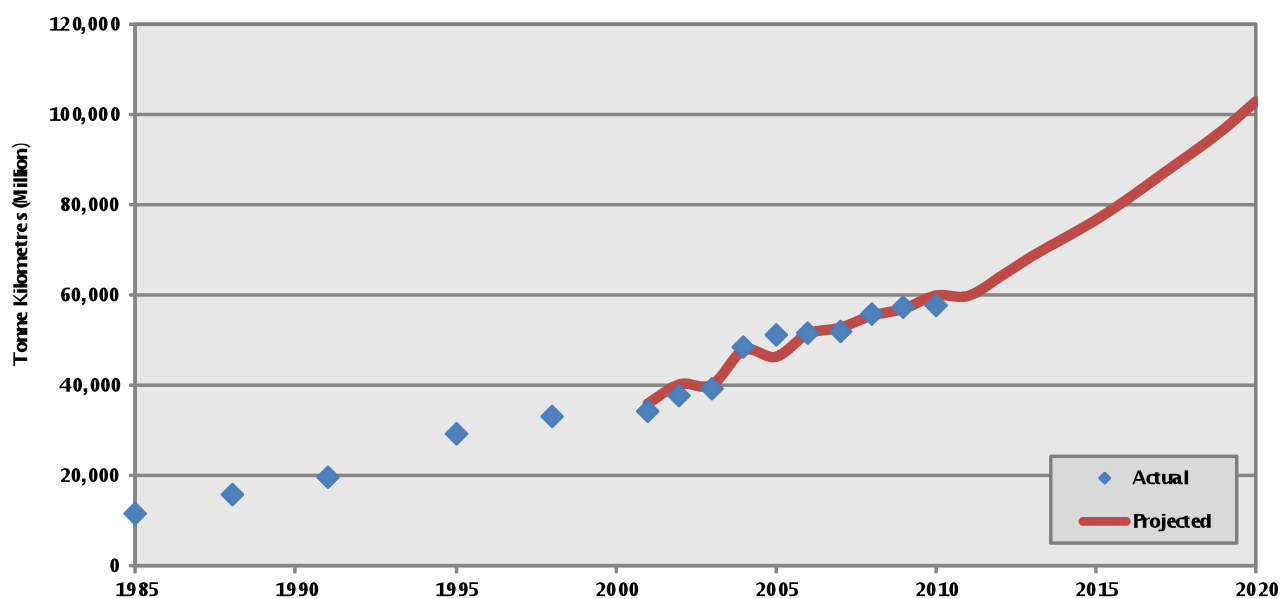


✦ Forecast growth in freight movements

Forecast growth for the landside road and rail modes is shown in Figures 2.5 and 2.6. The accuracy of the CTEE forecasting model is demonstrated for the road mode by backcasting over the last 10 years.

Growth in economic activity is projected to increase the state’s road freight tonnes by 424 million tonnes or 72.1% by 2019/20. Given expectations for average distance travelled, average loads and road freight productivity, the annual road freight task in Queensland is projected to increase by 71.6% from 58.0 billion tonne-kilometres in 2009/10 to 103 billion tonne-kilometres in 2019/20.

Figure 2.5: PAST AND FORECAST FOR THE QUEENSLAND ROAD FREIGHT TASK



The annual net rail freight task is shown in Figure 2.6. It grew by 5.0 billion tonne-kilometres or 9.5% to 58.0 billion tonne-kilometres in 2009/10. Growth in the economy is projected to influence an increase in the annual rail freight task of 57.6 billion tonne kilometres (or 106.3%) to 111.8 billion tonne-kilometres in 2019/20. In Queensland, the ancillary rail freight task – being the movement of an entities own freight – is very small. Unless companies become more vertically integrated – for example, between mine, railway and port, as is the case for Western Australia’s iron ore exports – the ancillary task will remain of little consequence.

The annual domestic shipping trade loaded in Queensland grew by 0.3 million tonnes to 20.5 million tonnes in 2009/10. Approximately 13.5 Mtpa of this task is transport of bauxite from Weipa to Gladstone. Even though the sea freight task, when expressed in tonnes, is relatively low compared to the other modes, tonnages are generally transported a long distance so it is a large task when expressed in tonne-kilometres as Figure 2.4 shows.

Figure 2.6: PAST AND FORECAST FOR THE QUEENSLAND RAIL FREIGHT TASK

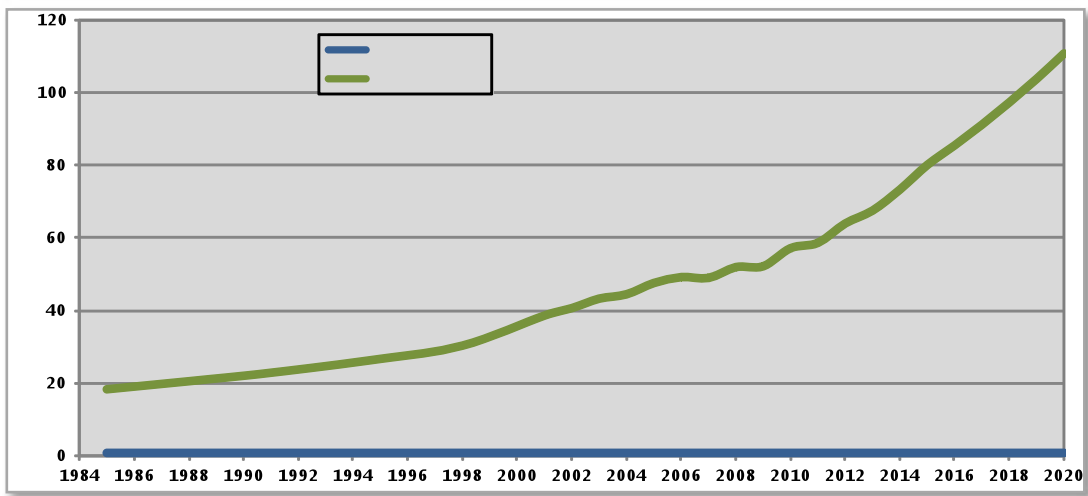
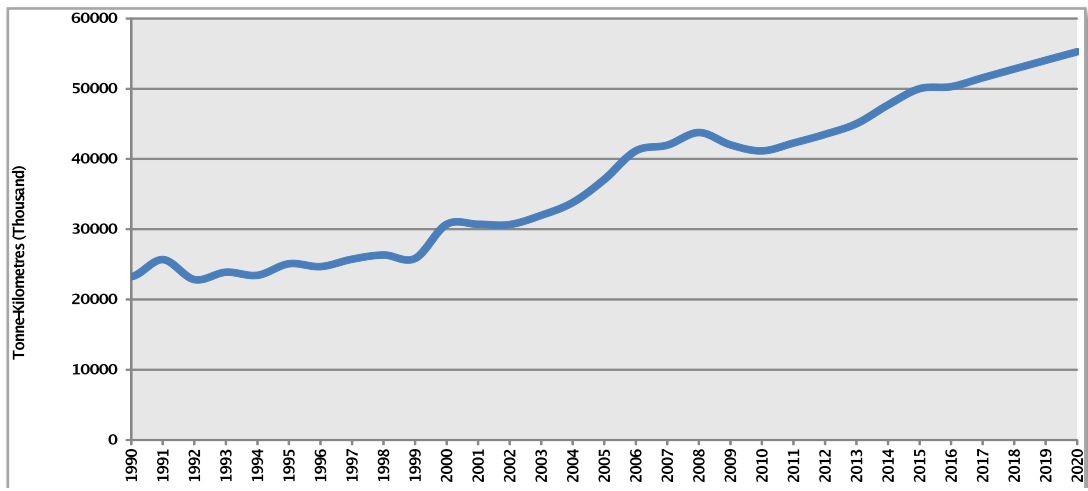


Figure 2.7 illustrates forecasts for the likely production of key commodities (such as bauxite/alumina, petroleum products, oil, coal, fertiliser and iron/steel) and general growth in the economy suggest that the annual domestic shipping task may grow by 34.3% to 55.3 billion tonne-kilometres in 2019/20.

Figure 2.7: PAST AND FORECAST FOR QUEENSLAND DOMESTIC SHIPPING TASK



The forecast growth increases of about 70% for the road freight task and over 100% for rail in the next 10 years alone will provide many challenges for industry and government.

Subsequently, this report suggests the most important initiative is to capitalise on the opportunities available to better use existing infrastructure, while supporting enhancements for crucial supply chains, using the available data.

2.3 Queensland's freight system

This report and the QTLC use the terminology, Queensland freight system, as an encompassing term for freight transport and logistics within Queensland. It includes the freight networks and mode/s through which freight moves, the policy and regulatory, financial, administrative and infrastructure contexts, and the public and private sectors involved.

The policy, network and freight demand aspects of the Queensland freight system are discussed below.

➔ 2.3.1 Queensland freight strategy context

The Department of Transport and Main Roads (TMR) is the lead agency for landside freight policy in Queensland, and the Department of State Development, Infrastructure and Planning (DSDIP) is the lead agency for ports policy and state development.

TMR is responsible for developing and administering much of the legislation regulating freight transport including the *Transport Infrastructure Act 1994*, the *Transport Operations (Road Use Management) Act 1995* and the *Transport Operations (Marine Safety) Act 1994*. Each act regulates policy relating to access, networks, priority and other matters.

TMR is in the process of reviewing high-level policies such as the Transport Coordination and Delivery Program (TCDP) and the Integrated Freight Strategy for Queensland (IFSQ).

The TCDP is expected to provide direction and objectives for the Queensland Transport System, with the IFSQ identifying Queensland's key freight policies, and actions to achieve them. The IFSQ will be the high-level policy document for landside freight in Queensland. The particular initiatives it will advocate, and how it may influence Queensland's policy and regulation, planning and enhancement, operations and access, will contribute to Queensland's supply chain efficiencies in the future.

Transport for New South Wales (TfN) released on 20 November 2012 its draft Freight and Ports Strategy (NFPS). The NFPS is a major advance on previous state freight strategies. It features multi-modal commodity supply chain flows with 20-year forecasts using the new strategic freight model and a three-pronged policy approach, which seeks to:

- get best efficiency out of the existing networks where these are under-utilised
- expand network capacity to support economic development
- achieve network sustainability, including minimising the societal impact of freight transport.

Under each of these policy domains lie actions and tasks. For example, under the network sustainability theme the Action 3A is 'Embed freight requirements in planning schemes'. The approach, policy directions, actions and tasks from the NFPS have informed this report.

A best practice freight strategy is recommended to guide TMR's policy, planning and investment. This will ensure the importance of freight and logistics is consistently taken into account in TMR strategies. For example, the Bruce Highway Action Plan (BHAP) and Transport Infrastructure Development Scheme (TIDS) do not necessarily reflect freight information or efficient supply chain emphases as discussed later.

It is highly desirable that Queensland's next freight (and ports) strategy incorporates best practices from other jurisdictions and national entities if its supply chains are to be strengthened. The QTLC is well placed to assist TMR and DSDIP in their development.

➔ 2.3.2 Freight networks

The Queensland Government released the Integrated Freight Strategy for Queensland (IFSQ) in November 2011. It sought to provide guidance on the transport of freight on Queensland's rail and road network. It also designated Queensland's key freight network elements, which are shown in Figure 2.8.

The IFSQ shows more freight from different supply chains moves along some corridors than others, for both the rail and road networks. Therefore, in this and other documents, the state has developed Priority Freight Routes for both modes. Priority Freight Routes are discussed in detail in Chapter 5 for rail and section 6.3 for roads.

Figure 2.8: QUEENSLAND'S STRATEGIC FREIGHT TRANSPORT NETWORK



➤ 2.3.3 Freight flows

The nature and volume of freight flows is related to the supply chains being served by the transport corridor. Sectors creating freight-oriented supply chains are shown in Figure 2.1 and include the mining, agriculture, manufacturing and construction sectors. These form a larger component of the Queensland economy than any other state except Western Australia.

Freight demand is generated in specific locations, especially for the mining and agriculture sectors. Likewise, the domestic or international consumption of freight is aligned with population in Australia for the former and ports for the latter. Often there are intermediate manufacturing or retailing supply chain steps.

All these factors influence how freight flows through the multi-modal freight network.

It is important to understand and map supply chains and freight flows in order to identify critical freight infrastructure and blockage points, and plan for the forecast freight growth to provide infrastructure, minimise impacts on communities and invest for best outcomes.

A number of TMR sources present freight flows in Queensland, however, many of these are now out of date or do not report corridor level information on the freight volume being moved.

Figure 2.9: KEY GENERAL FREIGHT MOVEMENTS IN QUEENSLAND



For example, the multi-modal Freight Transport Map developed by TMR in April 2003 has some freight generators displayed – ports, sugar mills, coal mines etc. – but the criteria used to determine display is not shown. Operating and non-operational rail lines are shown, however, there is limited information about their freight flows or characteristics. The road network is presented on the basis of national highways and other state-controlled roads overlaid with an access classification of high productivity vehicles (HPVs), including B-doubles, Type 1 and Type 2 road trains, however, there is no information about road freight flows.

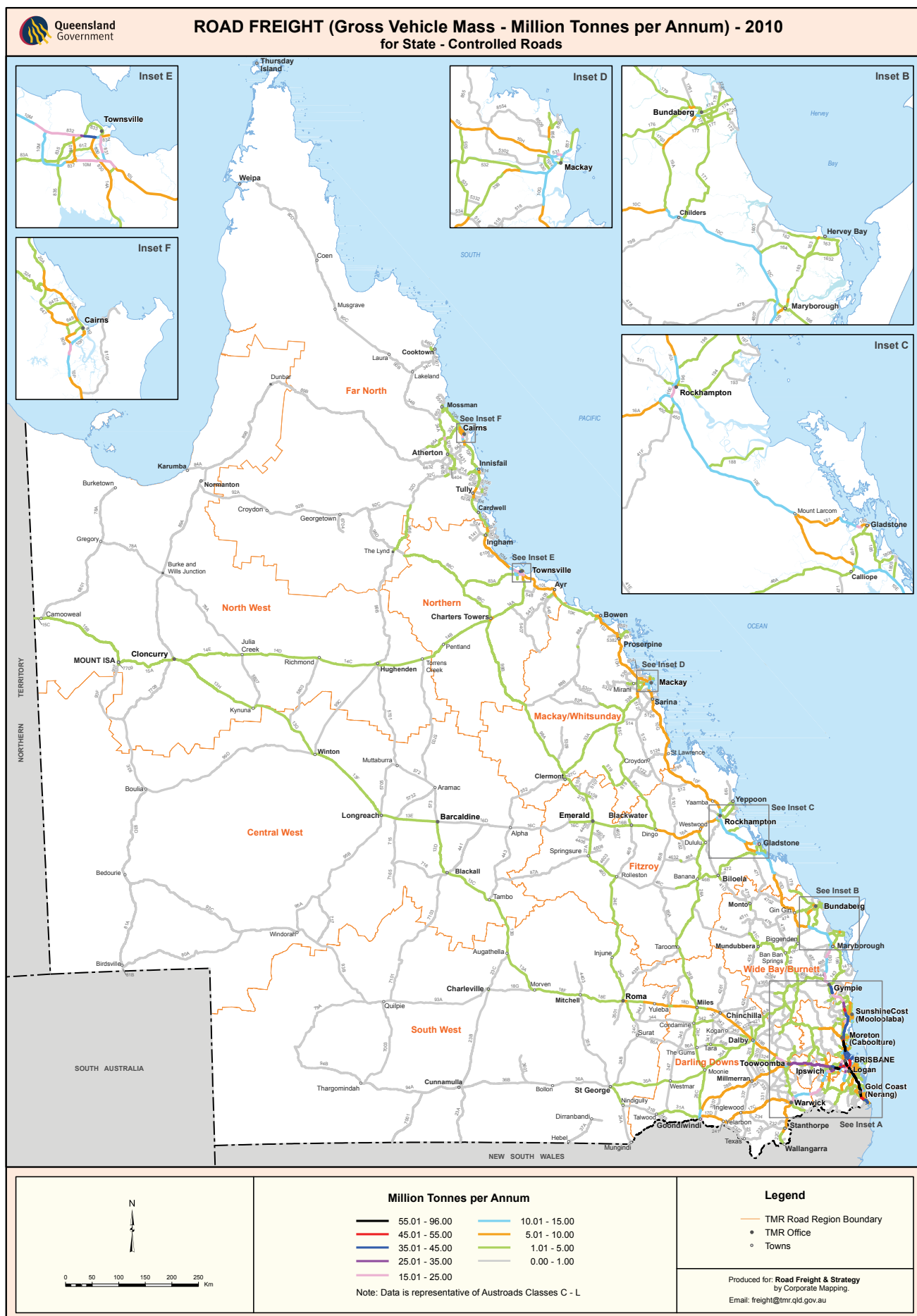
The IFSQ presented indicative freight flow volumes for conceptual corridors, however, there was no information on the commodities or modal volumes, as shown in Figure 2.9.

The best source of information on freight flows exists only for state-controlled roads (SCRs). TMR’s third iteration of its Road Freight Map was released in December 2011 – Figure 2.10 – using 2010 gross vehicle mass (GVM) data as a surrogate for freight flows. It is being updated using 2012 data.

Rather than try to estimate actual freight flows, the Road Freight Map presents these as the gross vehicle mass measured at weigh-in-motion sites, and interpreted for homogeneous elements of the SCR using permanent and temporary vehicle classification counters. It uses a colour-coded legend to discriminate different categories of road freight demand.

Its great advantage is that it forms a consistent picture of road freight flows on Queensland’s most important roads.

Figure 2.10 ROAD FREIGHT MAP FOR QUEENSLAND STATE-CONTROLLED ROADS



© The State of Queensland, 2011. Based on state government datasets. Disclaimer: While every care is taken to ensure the accuracy of this data, the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

S:\jobs\J085 2011\2016 - Freight Tonnage map revision\Road Freight Tonnage_181011.mxd 02/12/2011



Due to its consistent approach, the Road Freight Map is a valuable tool for gaining an understanding of freight flows. For example, it shows that the volume of freight flows within metropolitan Brisbane, and between Brisbane and the Gold Coast, Sunshine Coast and Toowoomba, exceeds greatly the road freight flows anywhere else in Queensland.

The road freight map, when combined with SCR access and road performance data, is also potentially very useful for planning and prioritising infrastructure enhancement and investment, which can lead to gains in supply chain efficiencies.

However, none of the available mapping documentation shows the commodities being transported, their time-sensitivity or their value. Nor does any indicate corridor level freight demand in the future, for example in 20 years' time.

➤ 2.3.4 Freight flow data challenges, opportunities and priorities

There are a number of gaps in the freight data available.

- Much of the rail freight mapping data is time-dated or not available due to a commercial-in confidence rationale.
- The road freight mapping data has been kept up to date, but uses GVM as a surrogate for freight.
- Neither source presents sufficient information on commodity flows.
- Neither source contains 20-year regional, commodity and corridor forecasts to analyse the freight growth challenges outlined in Chapter 2.

Transport for New South Wales (TfN) has overcome these weaknesses in its draft Freight and Ports Strategy (NFPS). It uses robust freight data to determine the policy and investment, that allows industry to invest with more confidence. To do so, it developed and used a strategic freight model, which is described in section 3.2.3.

The QTLC strongly supports making more freight data publicly available. There is virtually no current freight data on local government roads, which is discussed further in section 6.4. It is suggested that TMR leverage its existing data as follows.

RECOMMENDATIONS

2. TMR enhance and make better freight flow information publicly available by:

- collecting and using data from other agencies such as the Department of State Development, Infrastructure and Planning, the Department of Agriculture, Fisheries and Forestry and the Department of Natural Resource and Mines as well as local governments and the private sector for key mining and agriculture industries to improve the development and availability of consistent and reliable freight movement information

- working with the New South Wales and Northern Territory agencies to determine the road and rail freight flows crossing the Queensland border

- develop a rail freight map that specifies volumes and flow (similar to the road freight map).



3.0 AN ALTERNATIVE VIEW OF FREIGHT

3.1 Supply chains matter

In this report, the term supply chain means the logistics and transport of freight from point of production or manufacture to consumption, including upstream inputs and downstream outputs.

Freight moved on any modal corridor comprises the freight movements generated by supply chains. This freight has characteristics such as flow volumes, commodity types and value.

In sections 2.3.2 and 2.3.3, it was stated that freight movements are largely represented as a network of infrastructure, or depicted as general freight flows.

This form of representation does not identify the components of the network that commonly interact to service supply chains, nor how freight enters and exits freight corridors. It also does not identify the freight infrastructure critical for supply chain efficiency.

✦ Government perspective

From a whole-of-government viewpoint, the importance of efficient supply chain management is acknowledged and supported.

For particular state entities and local governments that are asset owners, there seems a narrower perspective, viewing freight as impacting on their asset, the safety of other users, the environment or on land adjacent to the freight corridor.

This perspective is both understandable and valid but does not fully encompass the economic (e.g. export value or regional development) or societal (e.g. employment) or financial benefits (e.g. revenue from taxation).

By working together, industry, stakeholders and government can identify, plan for and invest in policy, information, funding and infrastructure improvements that will not only mitigate some of the impacts, but also enhance economic and community benefits.



★ QTLC perspective

The QTLC understands all perspectives and is committed to strengthening the sustainability and security of Queensland’s supply chains. It appreciates that reducing freight costs through more efficient and sustainable freight movement or infrastructure enhancements can improve supply chains upstream and downstream, for the benefit of industry and Queenslanders.

All supply chains operate within government policy, and investment and regulatory regimes that can improve or reduce the effectiveness of supply chains. Examples include:

- the priority accorded passenger trains compared with freight trains
- investment priorities by all spheres of government for enhancing and maintaining freight infrastructure
- the regulation of access to road and rail corridors.

The QTLC recognises that improved policy, regulation and investment is important for supply chain efficiency. However, because of the interconnectivity and interdependence of the freight system and supply chains, improvement in any component may not maximise gains unless this unlocks a supply chain blockage or is supported by industry logistics changes.

This approach to overall supply chain efficiency is recognised by Infrastructure Australia in its National Land Freight Strategy Update document.

The QTLC understands and recognises the important contribution of both industry and governments in supply chain and freight network performance. As such it seeks to influence and improve freight transport and logistics outputs within available resources.

➔ 3.1.2 Study objective

As mentioned earlier, the QTLC has commissioned this project to seek ‘strategic and operational recommendations to improve the development and sustainability of efficient and productive supply chains in Queensland’.

It seeks to leverage existing knowledge of Queensland freight transport and logistics, the reports of others and previous working group outputs, to form a critique with a prioritised series of strategic and operational recommendations for the Queensland Government. The priorities focus on increasing efficiency without reducing safety, and are in the context of the Queensland Government’s ‘four pillar’ objectives and investment strategy.

The QTLC intends to submit the report to the Queensland Government and conduct bi-annual reviews of progress made in addressing the issues and implementing the recommendations.

★ Industry perspective

The movement of freight through efficient supply chains matters to every person and business in Queensland. Supply chains affect the supply and cost of goods that people and firms purchase and the services they market. As such, efficient supply chains are crucial to the Queensland economy.

Agriculture and mining production have fixed locations, while manufacturing locations can be integrated at different points of supply chains. For export supply chains, there may be little contestability between ports.

Industry is focused on achieving efficiencies from their particular supply chain/s through logistic improvements and moving their freight in the most efficient, resilient and sustainable supply chain logistics and modes available, within the constraints of current freight policy and transport corridors.

3.2 Supply chain data to derive priorities and influence policy

The importance of a supply chain is characterised by its part in conferring value to its freight being moved. Value suggests financial importance. Due to commercial-in-confidence affecting data availability, alternative supply chain attributes are used for the value of freight, including freight:

- volumes
- time sensitivity
- safety and sustainability, reliability and resilience.

Supply chains can be prioritised according to attributes such as the above, and government policy, regulation, investment and operational decisions should be developed to reflect this priority. To do this rigorously, data on at least some, and desirably all, of the above attributes is crucial.

➔ 3.2.1 Strategic freight model to influence policy development

The National Heavy Vehicle Regulator (NHVR) reform aims to harmonise state policies for heavy vehicles crossing state borders for economic benefit. The difficulty the regulatory impact evaluators faced was the lack of data on cross-border road freight flows and attributes. The recently released Transport for New South Wales draft Freight and Port Strategy (NFPS) presents information from its new Strategic Freight Model. Figures 5 and 4 of that report are represented as Figures 3.1 and 3.2.

The NFPS notation below Figure 3.1 states that ‘Interstate movements make up approximately 20% of the total New South Wales [freight] task³’. Of the 82 Mtpa interstate freight flows shown in Figure 3.1, 50% is ascribed to Victorian/New South Wales freight flows and another 34% to Queensland/New South Wales freight. The ACT freight flows can be discounted, as they lie within New South Wales and the flows are essentially regional in nature. All other interstate flows between New South Wales and all other states and territories total less than 9%.

It follows then to ask how much of the 20% of the interstate movements relates to longer distance freight flows and how much is of a regional nature, similar to those of the ACT, which just happen to cross a state border?

Inspection of Figure 3.2 from the report indicates that of the 28 Mtpa freight flow between Queensland and New South Wales, only 5 Mtpa is focussed on Sydney. Similarly, only 8 Mtpa of the Victorian/New South Wales freight flows are focussed on Sydney. This indicates that a very high proportion of interstate freight flows are likely to be shorter and regionally oriented rather than long distance.

Figure 2.10 shows many supply chains are shorter than generally known, supporting the TfN Strategic Freight Model. It also demonstrates how quickly road freight flows dissipate away from major urban areas.

³ This implies New South Wales freight is approximately 400 Mtpa which seems low based on CTEE data.

Figure 3.1: 2011 INTERSTATE FREIGHT FLOWS ALL MODES



Figure 3.2: TOP 10 NEW SOUTH WALES 2011 FREIGHT FLOWS ALL MODES



This long distance task represents only 3–4% of the total all modes freight flows in New South Wales. Analysis in Chapter 5 found that the interstate rail line carried 2.5 Mtpa, but rail is not the province of the NHVR.

Most interstate freight flows are regional in nature. As well as the Canberra example, the NFPS cites Casella Wines near Griffith, which exports through the Port of Melbourne. The far north of New South Wales, north of Ballina, Lismore and Casino, is largely serviced from Brisbane. Figures 7.2 to 7.3 show the destinations of imports from the Port of Brisbane. This too illustrates the significant proportion of local, compared with intra-regional, inter-regional and interstate freight movements.

This analysis demonstrates that most interstate freight movements are not necessarily long distance in nature. It further suggests that freight movements will be focused on the closest suitable destination rather than a destination that is further away.

This analysis provides an example of how the lack of data has the potential to skew policy if the real world situation is not understood. Correct and comprehensive data, expertly collated and modelled, will allow analysis that can inform and influence policy. This in turn will help supply chains to be more efficient.

➔ 3.2.2 How the strategic freight model is used in New South Wales

The format and analysis of data being produced by Transport for New South Wales's Strategic Freight Model (NSFM) will inform future freight policy and planning initiatives throughout New South Wales. Transport for New South Wales can use the model to:

- determine freight capacity constraints by transport mode, both now and in the future
- provide inputs for cost benefit analysis and investment decision making
- provide inputs for regional planning.

It could also be used to prioritise key freight routes, assist with their incorporation into local government planning schemes, inform the planning of freight infrastructure and, along with other tools, assist HPV access decisions.

Already, New South Wales has used the model and other data to develop a three-level urban road freight hierarchy within the Sydney metropolitan area, using transparent (published) criteria⁴. Freight volume is a key criteria and the number of articulated vehicles are used as an alternative to freight volume, similar to the 2005 South East Queensland Regional Plan (SEQRP), which is discussed further in section 6.3.

Queensland does not have an equivalent strategic freight model, but it does have the capacity to leverage existing data and models to develop a similar model to deliver the same benefits. This is discussed in the next section.

⁴ Page 148 and Figure 48, Transport for New South Wales draft Freight and Ports Strategy.

3.3. Data challenges, opportunities and priorities

3.3.1 Queensland freight data and modelling

There is limited data on supply chains and the resulting freight movement patterns within Queensland. With the very recent exception of New South Wales as cited above, this is the case for most Australian states.

Existing sources analysing freight movements in Queensland are limited. As a result, decisions regarding Queensland's freight policy, operations, and infrastructure planning and funding must be made without this critical information.

The principal sources on which this project bases its analysis to critique the challenges for supply chain logistics, and derive its priorities/opportunities, are:

- Centre for Transport, Energy and the Environment (CTEE), Queensland Transport Facts
- TMR Road Freight Map for Queensland and its South East Queensland inset.

These two primary sources were supported by:

- reported outputs of TfN's Strategic Freight Model, with inferences for the Queensland context
- data from the Port of Brisbane QTLC IMEX project draft report, discussed in section 7.1.1.
- websites as referenced.

The Queensland Transport Facts presents current and 10-year forecasts for all landside modes for both passenger and freight but, at this stage, only on a whole-of-state basis. Chapter 2 described this source's forecast of 10-year growth of about 70% for the road freight task and 100% for the rail freight task.

TMR's Road Freight Map for Queensland presents gross vehicle mass data as inferred freight flows for all state-controlled roads for 2010. While these are consistent they do not forecast future demand.

While the data sources used in this report could be more comprehensive and detailed, analysis of these sources and those quoted has produced the priorities listed throughout this report.

The next sub-section describes Queensland's current freight models and their capabilities.

3.3.2 Queensland's current freight models and their challenges

There are already at least three freight models being used by TMR for different purposes, modes and areas of Queensland.

TMR has, for many years, purchased the CTEE's AUSeTRAN whole-of-state, passenger and freight, multi-modal, dataset and 10-year forecasting models as the Queensland Transport Facts. This source provided all the freight forecasts described in Chapter 2. These freight forecasts could be used to provide an aggregated forecast target for any other freight model. The forecasts are based on independent estimates of changes in measures of the state economy such as private consumption, gross state product, housing investment, imports and exports. Accordingly, the resulting forecasts are more robust than those produced by other models which rely on employment as the key independent variable and do not take into account the impact of changes in productivity.

The Brisbane Freight Movement Model (BFMM) was developed for TMR by the former Integrated Management Information Systems and has recently been extended to cover South East Queensland, both with a 20-year horizon. It provides estimates for 33 commodities⁵ and where they are generated and destined at a Statistical Local Area (SLA)⁶ level, based on employment attributes as the same level. It also allocates the freight to rigid and articulated vehicle movements. It forecasts the same attributes using employment forecasts, so has the capability to produce the heavy vehicle matrices used in TMR's Brisbane Strategic Transport Multi-Modal Model (BSTM-MM) and South East Queensland Strategic Transport Model (SEQSTM).

The BFMM was a great advance on previous techniques to develop urban freight models⁷, and represents current orthodoxy.

⁵ The FMM uses 33 industry classes derived from Level 1 and Level 2 2006 ANZSIC (ANZ Standard Industrial Classification). These are used to define production, redistribution and consumption models.

⁶ These SLAs are based on the 2006 Statistical Local Area Geography which has been superseded by the ABS. TMR now uses Statistical Area Level 2 which is similar to SLAs but not constrained by government boundaries.

⁷ Although both the BFMM and other urban transport models use small zone employment forecasts as the causal input to generate freight flows, recognising the difficulty of other causal inputs.



The BFMM uses employment industry classes to generate causal relationships for tonnes produced per average weekday. These are subsequently converted to two types of truck movements (heavy and rigid) for use in the transport models. Special generators such as ports and rail terminals use historical data⁸ and forecasts from port authorities, customs or/and BITRE information.

It relies on TMR developing employment forecasts at the quite detailed zoning level used in its urban models.

The Freight Movement Model (FMM) was developed to augment urban transport models, rather than be a whole-of-state, multi-modal supply chain model⁹ although it does include a commercial vehicle tour or trip-chaining capability, and these capabilities can be added¹⁰.

The Port of Brisbane is updating its survey data (section 7.2), which may enable TMR to update the FMM¹¹.

Furthermore, TMR has been working with the CSIRO to develop an Infrastructure Futures Analysis Platform, which was originally used primarily as a rail-based case study on the Mount Isa to Townsville corridor, and is discussed further in Chapter 7. This model seeks to deliver optimal train formations and operations for a rail line with a set of supply characteristics (axle loading, passing loops and the like) for any freight demand scenario, or identify how the rail line could best be upgraded to allow the

forecast demand to be carried. It was initially developed to model the logistic factors, to optimise the investment and provide increased capacity for the expected growth in mining output (added as scenarios) on the Mount Isa Line. It considers the capability of the current rail line (axle loadings, passing loop lengths and locations, grades), the train characteristics (length, frequency and carrying capacity) and provides advice on the least cost investments to carry the freight demand scenario.

Both models have their strengths and should continue to be applied, supported and developed, particularly in regions to the extent they are used and found useful.

However, neither model was designed to provide a whole-of-Queensland freight flow demand forecast for commodity productions and attractions at a regional level over a 20 year period and with a multi-modal, multi corridor capability as does the TfN Strategic Freight Model.

The rail sector and road transport industry and other supply chain operators and stakeholders strongly support Queensland needing a freight model which can generate current and future multi-modal freight movements for a large number of the relevant commodity types on a whole of state, regional (local government area basis) and corridor basis as New South Wales already has.

8 Surveys were conducted in the early-mid 2000s.

9 Although the equivalent Sydney FMM has provided information for their Strategic Freight Model.

10 The FMM can now estimate movements by rigid trucks, articulated heavy vehicles and rail provided that relevant truckloads and modal splits are entered exogenously.

11 Although TMR's former Modelling, Data and Analysis Centre was recently closed.



✦ The NSFМ description

A strategic level description of TfN’s Strategic Freight Model follows. Its hands-on model is comprised of three modules and was informed by 15 key private sector advisory groups including key agricultural sector experts.

- One module develops current demand and forecasts future demand at a local government level for 72 commodities; importantly, many of them are agricultural commodities.
- Another considers the current and future road and rail corridors and their attributes, including the types of vehicle/rolling stock able to be used and their carrying capacity.
- The third module has GIS and multi-modal choice capability.
- The 15 key commodity/supply chain advisory groups augmented available supply chain productions, attractions and forecast information.

The model is being further developed to provide greater rail modelling capability, including for train paths in a passenger and freight train environment.

➤ 3.3.3 Data opportunities and priorities for freight modelling

Section 2.3.4 suggested a priority to further develop road and rail freight maps without the support of a Queensland strategic freight model such as the NSFМ. If Queensland were to develop a similar strategic freight model, this could provide the 10 and 20-year forecasts of road and rail demand.

For a Queensland Strategic Multi-Modal Supply Chain Freight Model to be developed as a high priority, it must inform:

- criteria for developing a multi-level, multi-modal, urban and regional Priority Freight Route hierarchy, based on supply-chain-generated freight demand rather than the level of asset development or the level of vehicular/rolling stock access to it; a rigorous, structured determination of Priority Freight Routes (discussed in sections 5.1 for rail and 6.3 for roads) will assist with their incorporation into local government planning schemes (discussed in section 6.4)
- policy and regulation to assist the efficiency, safety, reliability and sustainability of supply chains
- planning and prioritising urban and regional modal freight infrastructure investment to assist the efficiency, safety, reliability and sustainability of supply chains by:
 - helping determine freight capacity constraints by transport mode
 - providing inputs for cost benefit analysis and investment decision-making
- along with other tools, decision-making for HPV access
- decisions for road operations.

TfN is using its Strategic Freight Model to enhance other information and tools for these purposes. The NSFМ was reportedly developed within 12 months at a relatively low cost well under \$1 million. Given its demonstrated use in New South Wales, a high priority should be given to developing a similar model for Queensland.

RECOMMENDATION

3. The Queensland Government give high priority to developing a whole-of-Queensland Strategic Freight Model of at least equivalent capability to the New South Wales SFМ.

★ Towards a Queensland Strategic Freight Model

The development of a Queensland Strategic Freight Model (QSFM) should:

- refine the above rationale/purpose to:
 - justify developing a QSFM
 - describe its objectives and the performance of its outputs
- review the New South Wales SFM and any model used in Queensland, or other jurisdictions, to leverage current capabilities
- scope a development program for a QSFM, including bounding conditions/inputs such as use of econometric data and/or the CTEE processes and outputs
- determine whether the model can be developed in a timely manner, drawing on the existing data sources used in this report and information from the QTLC stakeholders and industry or needs to be developed in stages
- establish a business case, using the benefits stated in this section and the report
- seek available data from industry, other tiers of government, and the Departments of State Development, Infrastructure and Planning (DSDIP), Agriculture, Fisheries and Forestry (DAFF) and Natural Resources and Mines (DNRM)
- establish high level and coordinated industry groups reflecting key supply chains and industries
- complete development, population and calibration of a QSFM Stage 1 within 12 months.

A key principle will be to keep the QSFM at a simple but robust level, initially, expanding its capabilities in line with benefits achieved from its deployment.

If the model is developed using similar processes to the TfN SFM it will require the support of key supply chain companies and advisors, and data inputs from key industries. Correspondingly, those providing input may require access to model outputs and possibly some module information in order to have confidence that the model is producing reasonable outputs for the current situation. Importantly, the private sector must be able to update the QSFM with information or augment the model in the future.

It is also critical that any concerns industry may hold regarding the release of commercial information are managed. Consequently, consideration should be given to whether a QSFM should be developed within government or hosted by a third party such as the QTLC, CTEE, CSIRO or a university, provided the entity has demonstrated freight modelling capability and approved governance processes.

The QTLC is well placed to work with the Queensland Government to help develop a strategic freight model for Queensland.

RECOMMENDATION

4. TMR develop a scope, business plan and host options for a QFSM within three months.

The QSFM, similar to the NSFM, be developed within 12 months.



3.4 The way forward - how supply chain challenges are addressed

To ensure scoping is realistic, Infrastructure Australia proposes to implement the NLFS using six major principles, including:

- recognising [supply chain] logistics
- building on what is there
- taking practical steps.

The remainder of this report critiques the key areas, and uses these principles to describe supply chains, identify the challenges and outline opportunities and priorities to address them.

In this report, key whole-of-Queensland supply chain issues are discussed and critiqued for rail and road in the following chapters, with a preceding discussion on contestability, investment and management.

Queensland's key supply chain corridors are then identified and analysed. Each regional supply chain is described, and the challenges arising critiqued. Following analysis of the challenges, solutions are presented as opportunities or priorities.

The final chapter of the paper summarises the recommended priorities and outlines an approach for implementation and ongoing review.



4.0 FREIGHT CONTESTABILITY, INVESTMENT AND MANAGEMENT

4.1 Modal contestability and pricing

➤ 4.1.1 Road, rail and maritime pricing

The Supply Chain Draft Pilots Position Paper states that ‘broadly speaking, supply chain participants operate in price distorted modes (road, rail, coastal shipping) leading to uncertain and potentially inefficient modal decisions and inappropriate capital investment by government and industry’.

The key questions for Queensland are:

- To what extent is modal pricing contributing to distorting road/rail contestability?
- For which corridors and cargoes does this matter?
- When is it likely to be overcome?
- What can be done in the interim?

➤ 4.1.2 Is modal price distorting contestability?

The National Transport Commission (NTC) website contains numerous reports produced during the last two decades that are focussed on the road rail pricing issue, illustrating the complexity, sensitivity and change-resistant nature of this pervasive issue.

In its submission of 9 April 2009 to the NTC, commenting on its Freight Rail Productivity Review and Supply Chain Pilots Draft Position Paper, the Australasian Rail Association (ARA) noted:

- ‘Heavy road vehicles pay only “marginal cost” for use of the [road] network, making no contribution to many shared facilities including road signs and signals, most land acquisition costs, administration, planning and design costs, etc.’
- ‘Heavy road vehicles¹² do not pay for some costs imposed on others such as noise, pollution and congestion delays.’
- ‘In general, heavy trucks pay marginal cost for use of roads, while rail freight pays average cost plus a profit margin.’

In Queensland, Transport Service Contracts (TSCs) apply for services on certain rail lines, which makes the last statement less transparent on those lines/systems where the TSC apply.

¹² Generally, nor do other modes such as rail and aviation.



While there have been several reviews of the national program of heavy vehicle charging over the two decades, road pricing reform remains on the COAG agenda.

This may be partly because the contestable market between the two landside modes is considered¹³ to be only about 15% of the rail freight, with factors other than pricing influencing this freight modal choice. These include flexibility to cater for the type and volume of freight being moved between points, the extent of the two modal landside networks, interstate network connectivity, whether the network is open or closed, ability to service customers, availability of service, terminal investments and reliability/resilience.

To a far greater extent than on the rail networks, heavy road vehicles are able to share the road network with passenger vehicles. Paradoxically, the features that make rail so efficient for the movement of bulk freight – long length, non-stop, high tonnage, medium headway, slower accelerating, stopping and moving trains – make them inefficient in sharing the available rail network with short length, multi-stop, high-frequency/low headway, high accelerating, stopping and moving passenger trains.

Coastal shipping displays some of the attributes of the rail system, including constrained servicing points, high volume cargo requirements leading to terminal size, investment and costs and trade-off in service frequency and the need to recover all costs.

Modal pricing appears to be only one of many factors that contribute to a lack of contestability between the road and rail mode.

¹³ By the Australian Rail Association among others.

➤ 4.1.3 For which freight and corridors does this matter?

As well as pricing, geography has a significant influence on contestability for both the rail and especially maritime modes. Location of marketable resource deposits, the Great Dividing Range in the eastern states, the size of states and the extent to which ports can service demand points play major parts in modal contestability.

Rail is still the more efficient mode for high volume bulk freight and other types of freight movement over long distances. Rail's share of the freight market along the eastern seaboard has been declining for decades.

Interestingly, the rail freight task is growing faster than the road freight task when both are expressed in terms of billion tonne-kilometres¹⁴, as outlined in Chapter 2.

Not all the road elements of that network are contestable by rail or maritime, but some are. In terms of Queensland, the north-south coastal corridor may be contestable by coastal shipping as well as rail. The road/rail competition along the east-west Queensland corridors where there is a rail line, is largely determined. Interplay between the freight demand and rail offering then determines whether rail is dominant or lacks contestability. Contestability is discussed in more detail for regional supply chain corridors in Chapter 7.

➤ 4.1.4 Challenge: Is 'when will a change in modal pricing occur' the issue?

Regulatory reform is complex, sensitive and fraught. High profile reforms invariably take many years, such as in the case of the following examples.

- After a decade, the Performance Based Standards (PBS) process has approved about 1000 PBS vehicles, slightly more than 1% of Australia's articulated truck fleet.
- The National Heavy Vehicle Regulator (NHVR) reform has been in planning and delivery for at least half a decade. The NHVR commenced its administration of the National Heavy Vehicle Accreditation Scheme and PBS service on a national basis on 21 January, 2013, with its vehicle legislation intended to pass all parliaments by July 2013.
- COAG Road Reform Plan (CRRP) for heavy vehicle charging (and now investment) had been pursuing a new heavy vehicle charging model for half a decade. About a year ago, it was renamed the Heavy Vehicle Charging and Investment, operating in Victoria.
- The National Land Freight Strategy Update has proposed revisions to the National Land Freight Network as a basis for road reform, for discussion with the states.

¹⁴ Source: Queensland Transport Facts, CTEE.

Considering the complexity of the national pricing reform issues, noting historical progress over many years and the current COAG paradigm, it may be some years before significant pricing reform is delivered, even on those corridors where road rail contestability is evident.

In this circumstance, it may be prudent to reframe the long-running landside modal contestability issue into a supply chain efficiency issue.

From a supply chain efficiency viewpoint, it would be prudent to consider whether there are other options for investment to improve rail (and road) freight efficiency in the short term, at least for infrastructure blockages that can be addressed at relatively low cost. Examples of low cost infrastructure blockages include:

- a bridge or culvert with a low load limit
- low power lines/inadequate clearances limiting over-height vehicle/rolling stock movement
- lack of passing loops/pullover bays limiting rail/over-size, over-mass (OSOM) movement efficiency.

4.2 Investment opportunities and priorities

➤ 4.2.1 Interim investment challenges

As discussed in section 4.1, the modal pricing paradigm for each road, rail and maritime mode is different. Although this issue is on the COAG agenda, and has been analysed by the NTC and others over the last two decades, resolution may still be some time away.

The longstanding regulatory practice for the rail, land use and RAV road modes is that new entrants provide sufficient infrastructure or charges, or meet other conditions to make the current operational situation no worse. However:

- Sometimes the proponent cannot justify the cost of meeting the conditions and the development does not proceed, even if the applicant would be prepared to make a contribution.
- Where it does proceed, existing or future competitors may receive a benefit from the upgraded infrastructure without providing an equivalent level of financial support.
- In some cases, a network user would be prepared to provide some funding to upgrade an infrastructure bottleneck, but not sufficient for the required investment, or not if it advantages non-contributing competitors.

A new beneficiary-pays investment model has been developed in Western Australia, which seems to overcome these issues.

➤ 4.2.2 Western Australia's interim investment regime

Western Australia has developed a beneficiary-pays blockage investment model as an adjunct to its private-public sector OSOM advisory mechanism and transparent OSOM Unit business model. It shows promise for use in removing 'low-cost' infrastructure blockages for particular types of OSOM movements along certain road corridors.

Many types of HPVs require a restricted vehicle access (RAV) permit and charge to gain access to the road network.

Using over-height RAV movements as an example, road transport operators incur a fee. Electric companies can also charge to cover their costs if electric company-qualified personnel are required to lift power lines to allow transit of the over-height OSOM movement. All the fees, charges and resource costs to the road transport operators could be saved if the power lines were raised or put underground.

Under the Western Australian model, the Department of Main Roads pays the power company to put power lines underground, and recoups the outlay through charging higher fees to the set of benefitting RAVs. These higher fees are lower than the road transport operators would have been charged by the power companies. This leads to immediate savings, and only applies until the capital outlay to fund the upgrading is recovered.

The Department's power to charge a higher fee is established by a regulation that is set to apply to the benefiting class of RAVs using the upgraded corridor. The public/private engagement mechanism, which championed and led to consensual agreement to the approach, is discussed in Section 6.1.

This beneficiary-pays blockage investment model has been used in a Stage 1 program to underground eight power lines along the Great Northern Highway with an increase in the regulated charge for benefitting over-height vehicles¹⁵. Stages 2 and 3, with over 200 power lines, are being assessed by a business case. As well, funding of pullover and passing bays for OSOM movements between Port Hedland and the Pilbara mines is being considered for investment on the same basis.

¹⁵ The period for recovery, cost of funding and other aspects of the recovery charges are being considered.

The model seems to be successful for the following reasons.

- There are transparency mechanisms in the business model and in having a public/private sector advisory mechanism monitoring it.
- Unlike the development assessment conditioning model, the Western Australian approach doesn't disadvantage the paying party compared with its competitors.
- The state government supplies the seed funding – although this could also be supplied by the private sector.
- It is applied in situations where the increase in movement charges for the benefiting heavy vehicle types reduces the cost of those movements immediately, and then completely over a small enough time period that it is economically viable for the road freight industry and their clients to consider the investment.
- As the road transport industry has paid for the infrastructure upgrade, it should not be included in outlays on which the national heavy vehicle charges are made.

➔ 4.2.3 Fixing Queensland's freight blockages through investment

The above beneficiary-pays blockage investment model has merit for application in Queensland as an interim or adjunct process to national road reform.

It relies on there being a positive public/private sector relationships between the road transport industry and the government department, formalising this in a private/public sector advisory committee – discussed in Chapter 6 - and a transparent business model, supported by stable policy and governance.

In Western Australia, the public/private sector advisory committee that led the breakthrough was chaired by a Director General.

The beneficiary-pays blockage investment model also relies on an agreed financial accounting policy for the infrastructure upgrades, and an IT system monitoring the number of benefitting OSOM movements, so that all the parties know that there is no under or over-charging.

The Western Australian type of low-cost road infrastructure investment should not be, and is not, included as heavy vehicle road infrastructure in the NTC's framework for heavy vehicle charges. Otherwise, industry may be double-charged for the infrastructure investment: once when they are charged for the relevant OSOM permit, and again through the national heavy vehicle charges regime.

The infrastructure blockage investment model was developed in public/private sector consultation in circumstances where the government was trying to facilitate private sector mining investment in the Western Australian economy.

In Queensland, the government has mining as one of its four economic pillars and is similarly seeking efficiencies to encourage investment.

Whether Queensland's infrastructure blockages are sufficient impediments to supply chain efficiencies or can be resolved through low-cost investment – or the private sector can gain sufficient benefits from them to support recovery of state or privates sector funding for addressing them – remains to be determined.

However, the QTLC supports the Queensland Government investigating whether a beneficiary-pays blockage investment model can improve Queensland's landside supply chain efficiency. If there is support, the QTLC is well placed to work with TMR to develop a scope, business model and public/private sector advisory group to address low-cost road and rail infrastructure blockages for the benefit of all parties and the Queensland economy.

RECOMMENDATION

5. TMR investigate the potential for a Western Australian style beneficiary-pays blockage investment model in Queensland, in consultation with the QTLC, DSDIP, Queensland Rail and others to ascertain if there is a role for it to improve the efficiency of supply chains and support for its implementation.



4.3 Rail investment framework in Queensland

In section 7.6, the Central Queensland supply chains are discussed, including the four lines the former Queensland Government sold to the then QR National, now Aurizon. Each of these lines carries between 11 and 99 Mtpa of coal, primarily for export.

In chapter 5 and section 7.2, a summary description of the supply chains and tonnages on Queensland's remaining rail systems and lines is collated. In various sections of Chapter 7 their challenges and priorities/opportunities are discussed.

An underlying and recurring issue is the Queensland Government's policy for securing investment in Queensland's three remaining major rail freight systems, including the:

- Mount Isa Line
- North Coast Line
- West Moreton and Western/South Western Systems through to the Port of Brisbane.

It is understood that the former government's policy was that government funding could only occur following a business case where increased revenue resulting from the upgrade will result in a positive net present value.

The effect of this unamended policy is that Queensland Rail has to have prospective users committed to contracts prior to gaining committed funding to allow the upgrade to be constructed. The upgrade may take many months or more typically, some years.

Only major mining or energy companies have the ability to commit to binding freight contracts that will commence some years in the future and bind them for the contract period thereafter.

The effect of the former Queensland Government policy is that Queensland's non-coal lines are generally, and particularly when compared with the competing road mode, of a low standard¹⁶ and have suffered from low investment for many years.

One of the Queensland Government's four pillars is agriculture. It is understood that the Queensland Government has stated that more agriculture freight should use the rail mode rather than road.

¹⁶ This 'low standard' terminology is described in sub-section 7.1.5

Grain, cotton and livestock are major agriculture outputs, but all are susceptible to weather events, particularly dry periods. They also exhibit seasonal characteristics. These are not circumstances where agricultural companies can commit to long-term contracts commencing some years into the future.

Paradoxically, where rail infrastructure that is ‘common’, that is, can be used by a number of users, it may be that an upgrade would provide sufficient opportunity to a number of sectors so that at least one and possibly several made greater use of rail. Each rail user should still be responsible for its on-site rail infrastructure.

An example is cited in section 7.4, with the West Moreton System at capacity at its range crossing near Toowoomba. There are a number of potential beneficiaries should the state government fund appropriate investment in a passing loop/s, a Toowoomba bypass and possibly bridge/s upgrading to allow higher tonnage rollingstock. Possible beneficiaries include industry sectors (agriculture: cotton, grain and livestock), mining and energy (fuel, fertiliser), rail companies and ports.

Even if the government provided upgraded common infrastructure, each beneficiary would have to invest in terminal facilities, and rail companies potentially invest in new rollingstock and locomotives.

Other beneficiaries include road managers, road users and communities affected by any future increase in the freight task which, without the rail upgrade, would have had to be transported by road.

Seeking to have more of the increased freight task transported by rail will result in a stronger business case for the Toowoomba Range Western Freight Corridor, as this will provide more certainty about future road freight projections.

It may be timely for the Queensland Government to review the rail investment framework, or at the very least trial a ‘relatively’ low cost investment for the passing loop/s and possibly the Toowoomba rail bypass for the Western System as discussed in section 7.4. The reason that this rail line rather than other rail lines is suggested for the trial is because it is currently at capacity.

In terms of balancing its rail funding budget, this report has suggested a range of measures including reviewing the Westlander service, which would save nearly \$20 million annually.

It may be that regional communities would be more prepared to accept Western and South Western Systems branch line closures if the funding saved was invested back into rail freight infrastructure.

As well, this suggestion could occur in association with the potential private sector investment framework discussed in sub-section 4.2.3.

A consequent policy issue is the openness and transparency of rail freight data to support investment by government. If rail users pay for the costs of rail through such things as revenue, it may be acceptable for their use to remain commercial-in-confidence. If government is partly funding the infrastructure, a more open approach to information about the use of and beneficiaries of the government funded common user information is required.

On 12 February, The Courier Mail published information showing that two Traveltrains were being subsidised by more than \$2000 per passenger trip. These subsidies were being transferred through Transport Service Contract. For the same reasons stated above, information regarding the quantum of funding, its application and the performance measures sought by the TSCs ought to be made publicly available, particularly where it may impact on the efficiency of supply chains.

Should the trial of a 'relatively' low cost investment for the passing loop/s and possibly the Toowoomba rail bypass for the Western System prove beneficial, it would encourage the Queensland Government to make judicious rail investments elsewhere.

Should it not result in more freight being carried on rail, the Queensland Government would have demonstrated that the current policy framework is valid, and that the agriculture sector and community aspiration to have more freight on rail would need further investigation.

One potential example for research is the attraction, benefits and costs of transporting livestock by rail, particularly where livestock has to be carried by road to the rail loading facility, which would result in double handling of the animals.

RECOMMENDATIONS

6. The Queensland Government, in consultation with Queensland Rail and other potential beneficiaries such as the agriculture sector, consider a relatively low cost infrastructure investment trial to increase the capacity of the Western System in proximity to Toowoomba with a viewpoint to increasing agriculture, mining and energy freight on rail in accordance with its four pillars policy.

The Queensland Government require that a new policy be developed so that freight data on rail lines where government provides funding, including through Transport Service Contracts, be made public to meet openness, transparency and governance criteria.

★ Using a Strategic Freight Model for Freight Funding Assessment

If the Queensland Government possessed a Strategic Freight Model with the capacity of the New South Wales model which:

- forecasts 72 different commodity productions and attractions
- has capacity to consider different rollingstock/truck types for a freight modal choice
- compares the current and new modal infrastructure performance of different corridors for corridor choice

it would be in a much stronger position to consider infrastructure investment for different corridors and modes to facilitate supply chain efficiency, as is suggested for the Western System in proximity to Toowoomba.

4.4 Supply chain coordination opportunities

The key findings of the Supply Chain Pilots Draft Position Paper^{17,18} for the coal, meat and livestock, grain and intermodal supply chains were:

- insufficient sharing of information
- lack of accountability
- lack of cooperation
- lack of certainty around government requirements for cooperation along supply chains.

While much of the paper related to rail freight, road freight features strongly in many supply chains.

The report found that supply chain coordination can produce benefits for the parties using capacity-constrained corridors, and reduce the quantum of funding that would otherwise be required.

The 50 Year Freight Infrastructure Planning, by Juturna for MITEZ and Infrastructure Australia, was completed in May 2012. MITEZ stands for the seven local governments and industries forming the Mount Isa to Townsville Economic Zone. The study was a collaboration between the MITEZ communities and included extensive consultation and economic analyses with state government input.

A key finding was the potential value of a supply chain coordinator function. The report noted that a supply chain coordinator could review input costs leading to investment mechanisms for the Port of Townsville and road monopolies (report recommendations 21 – 24 refer), with an emphasis on information sharing within a confidentiality framework.

It suggested ‘a mature, independent supply chain coordinator, working with transparent data with all stakeholders in the supply chain, would be in a powerful and unique position to recommend priority investments, planning requirements to remove bottlenecks and protect key aspects of land use for the future’.

The QTLC is supportive of the Queensland Government further investigating a supply chain coordination framework and function, which may be suitable for application in multi-modal corridors involving road, rail and ports where there appears to be a lack of alignment of supply with freight demand. Consultation within broader industry groups would inform these considerations. It notes the work being undertaken by the Department of State Development, Infrastructure and Planning (DSDIP), which is discussed further in section 7.4.

A recommendation is provided in that section.

RECOMMENDATION

7. The Queensland Government, in consultation with stakeholders, develop a supply chain coordination framework and function, suitable for multi-modal corridors.

¹⁷ Produced by Juturna Consulting for the National Transport Commission in March 2009.

¹⁸ In May 2009, the report was considered by the Australian Transport Commission. Ministers agreed that future work will be led by Productivity and Efficiency Standing Sub-Committee as part of a new streamlined structure of the Standing Committee on Transport and Infrastructure (SCOTI). There is no record on the NTC site of progress towards implementation.



5.0 RAIL FREIGHT IN QUEENSLAND

5.1 Rail freight

➤ 5.1.1 Rail freight and passenger growth forecasts and capacity challenge

The CTEE forecasts significant and challenging growth in Queensland's rail freight task of 106% in the next 10 years, as shown in Figure 2.6. Because the forecast growth is potentially largely in bulk freight, it is unlikely to be evenly distributed on the major rail corridors. Rather, this growth is likely to concentrate on those rail lines serving Queensland's mining industry. Even so, there is potential for rail freight growth on many rail lines servicing other industry sectors and Queensland's population centres.

As well, Queensland's rail passenger task of 55 million annual passenger trips in South East Queensland¹⁹ must grow if the objectives of the Connecting SEQ 2031 are to be achieved.

2011 saw the introduction of timetable changes on the Western Corridor and the North Coast Line including a 15 minute frequency to Darra only, both through the day and into the evening on weekdays and weekends. Due to track enhancement between Corinda and Darra, the increase in Citytrain services did not limit opportunities for freight train services. Enhancement of CityTrain service frequencies on other lines carrying freight trains may present challenges. Overlaying these Citytrain services, Traveltrains provide services from Brisbane to several regional lines.

Managing the increased train services needed to carry the forecast increase in freight and passenger demand on the capacity-constrained South East Queensland rail network will be a crucial challenge for government.

The Queensland Government is seeking extra capacity including the proposed cross-river rail project. After four years, this project is yet to receive funding, and its design and construction would be likely to take half a decade after any funding commitment.

¹⁹ Queensland Rail website, 24 February 2013

Even so, other major blockages on the rail network may not be resolved by the cross-river rail project, including train services to New South Wales, the Surat Basin and on the North Coast line.

For these reasons, this chapter describes the current rail policy and its impacts on freight train operations. It proposes a framework under which freight and passenger trains can best share the rail network and to increase overall network efficiency.

➔ 5.1.2 Regulatory challenges

In this sub-section, the term regulation is used to include policy, legislation and associated guidelines.

Train services giving the greater benefit for Queensland, whether social or financial, should be determined within a transparent framework and given appropriate operational priority – subject to maintaining the overall efficiency of the rail network. Policy, legislation and regulation should support this.

There are two major regulatory impediments or challenges:

- The Integrated Freight Strategy for Queensland (IFSQ), designating all Queensland operating rail lines to comprise the Rail Freight Network, does not discriminate between rail lines carrying tens of millions of tonnes per annum (Mtpa), rail lines carrying a tenth of that, and rail lines carrying one percent or less of that.
- The requirements of the *Transport Infrastructure Act 1994*²⁰ (TIA), Part 8 sections 265 and 266 require a railway manager to endeavour to bring a [scheduled] passenger service that is delayed back to its scheduled running time and to effectively allocate priority for regularly scheduled passenger services in allocating train paths.
- Subsection (3) of section 265 does not limit matters that the railway manager may consider as relevant when complying with (1) but the examples of relevant matters stated include a train transporting livestock and train service entitlements for services other than passenger services.

The TIA allocates the same priority for CityTrains carrying hundreds of commuters to work in Brisbane during peak hours to a long-distance Traveltrain carrying small numbers of passengers benefiting from substantial subsidies²¹ under the Transport Service Contracts. Because all operating rail lines are regarded in the IFSQ and TIA as having an equivalent freight function, the importance of the rail line for freight purposes is not taken into consideration.

Two effects of the current regulation are that:

- commercial rail freight train services are less reliable than they might be under different policy settings, and this increases the potential for rail freight traffic to be attracted to road, in turn increasing the safety risk for all road users
- when Citytrain passenger services are afforded more reliability on rail lines also servicing freight trains, the potential for rail passengers to use the road may be slightly reduced, along with the safety risk for all road users on Brisbane's roads.

These two results of current rail policy are not equivalent, and do not occur at the same time on the same rail lines. Freight trains in regional Queensland with exportable, revenue cargo exceeding their long-run rail costs can be delayed by heavily-subsidised Traveltrains, and where the rail system is at capacity, Traveltrains consume train path opportunities.

The Traveltrain trip network operates on a complex timetable on the North Coast Line²². Strict adherence to the TIA does not necessarily improve a scheduled passenger service²³ but can cause significant and compounding delays to other train services, and unreliability for profitable freight services. Traveltrain services may also impinge on the flexibility for high passenger Citytrain services.

²⁰ Reprint 13G effective 1 December 2012

²¹ This matter is discussed further for two regional rail corridors in Chapter 7.

²² The Tilt Train operates twice weekly on a 24-hour journey between Brisbane and Cairns. The Sunlander operates thrice weekly on a 31-hour journey between Brisbane and Cairns. The Tilt Train operates daily on a 7.5-hour journey between Brisbane and Rockhampton, and weekdays between Brisbane and Bundaberg. The Spirit of the Outback operates twice weekly on a 24-hour journey between Brisbane, Rockhampton and Longreach.

²³ Due to its multi-stop nature constraining the train's ability to regain its schedule.

The two policy positions described above set a decision framework into real-time rail operations. Other potentially broader policy options, that may bring greater benefits to Queenslanders overall cannot be implemented, and include:

- decisions improving the overall efficiency of usage of the rail network or rail corridors
- better allocation of available rail funding for community benefit
- giving service priority for freight cargo on the highest priority rail lines for time-sensitive cargo to help achieve the state government's focus on growing a four pillar economy.

Besides the relevant provisions in the *Transport Infrastructure Act*, the IFSQ and the Connecting SEQ 2031, the Rail Network Strategy of 2009 provides some guidance for rail operators. However, it is becoming dated as it references:

- Towards Q2, Tomorrow's Queensland (an initiative of the previous government).

It also includes:

- Objective Two: The rail network supports the rail transport needs of the community
- Objective Three: The rail network supports the rail transport needs of industry.

These are presented without:

- maps or diagrams showing which are the community (passenger) or industry (freight) rail lines
- further guidance on how any conflict between the two should be resolved, given the Rail Network Strategy scope explicitly does not focus on operational matters.

In order to make it possible for more freight to travel on rail, there needs to be a change in the current priorities - where any passenger train service on any line at any time has priority over any freight train, and all rail lines are considered to have an equivalent freight role.

Without a change in these policies, more freight is unlikely to be attracted to rail unless the rail network capacity issues are resolved by significant investment.

➔ 5.1.3 A possible approach for a Rail Network Operational (Efficiency) Policy

In order to facilitate government economic policy, a new operational policy framework comprising possibly three new policy layers is suggested. The three policy layers are:

- determine and publish a hierarchy of freight and passenger rail lines using transparent criteria and data
- develop both a freight train priority hierarchy using business criteria and a passenger train priority hierarchy using social criteria
- use these two sources to develop a new Rail Network Operational (Efficiency) Policy to provide greater rail network and operational efficiency, so that the greatest economic and social benefits are delivered for Queenslanders.

To give effect to the new Rail Network Operational (Efficiency) Policy, it should be the basis for:

- reviewing sections 265 and 266 of the TIA to align with it (rather than hard-wiring an approach into legislation, a review provides a reference to the Rail Network Operational (Efficiency) Policy, which could be amended as required)
- drafting an operational guideline to give train controllers greater clarity in their train priority control determinations in real time
- possibly developing a new real-time train operating forecasting system, to aid controllers in their decision-making.

The following sub-sections outline one possible approach to developing a Rail Network Operational (Efficiency) Policy. The purpose of this section is not to focus on the means of categorising a freight hierarchy, but to illustrate one way a freight hierarchy could be developed, and the benefits that could be derived from the application of a Rail Network Operational (Efficiency) Policy and related processes/ systems for both planning and especially train control.

✦ Freight rail line hierarchy

While some freight routes carry high volume/low value freight, other lines carry lower volume/higher value freight, and others still carry a mix of freight with some being seasonal. The different types of freight and their attributes have distinctly different cost and revenue implications. Some lines are likely to experience increased tonnages, others may not. These factors potentially make developing a freight line hierarchy complex and challenging.

In the absence of detailed revenue and freight data, a freight rail line priority based on (assumed) tonnage only is developed as a case study.

A single attribute based on tonnage alone does not take into account the needs of time-sensitive freight cargo (which may have higher value) for particular supply chains with performance agreements, or the impacts of livestock trains or seasonal freight on overall revenue.

Using this approach (to be augmented/refined in discussions) a three-level freight rail line hierarchy is suggested (by way of example) for consideration. Applying the same criteria the federal government used for determining its Auslink corridors, QTLC suggests that any line carrying more than 5 mega tonnes per annum (Mtpa), have the highest priority.

If the highest priority freight rail lines are those carrying more than 5 Mtpa, then the priority within this subset could be accorded to those rail lines carrying most tonnage – on the basis that delays have a compounding economic and financial impact. This approach suggests the following order of Priority 1 Rail Freight Lines²⁴:

- Aurizon’s four systems in central Queensland carrying between 11 and 99.7 Mtpa of coal
- North Coast Line carrying varying (say 3-10 Mtpa) freight comprising sugar, minerals, general freight/ consumer goods, industrial freight
- West Moreton, Western, South Western systems carrying nearly 10 Mtpa of primarily coal, but also grain, livestock and industrial freight
- Port of Brisbane Line carrying nearly 10 Mtpa coal, grain and meat
- Mount Isa Line (Great Northern Line) carrying about 6 Mtpa metallic minerals, refined metals fuel, acid, industrial freight, fertiliser and consumer goods²⁵
- Interstate Rail Line carrying perhaps 2.5 Mtpa, but planned to carry more than 5 Mtpa²⁶.

The QTLC suggests a Priority 2 Rail Freight Line category for all rail lines carrying less freight than five Mtpa, but more freight than 1 Mtpa, and that all other rail lines should not be considered a priority freight line.

✦ Passenger train hierarchy

In the absence of detailed passenger, scheduling and taxpayer subsidy information, the following passenger train hierarchy is suggested for discussion:

- weekday multi-trip peak period CityTrains – Priority 1 Passenger Trains
- weekday single-trip peak period Citytrain and all Citytrain services on a 15-minute headway during business hours – Priority 2 Passenger Trains
- other Citytrain services on weekdays – Priority 3 Passenger Trains
- weekend and public holiday Citytrain and all Traveltrain services – Priority 4 Passenger Trains.

²⁴ Rail freight line data sources referenced in Chapter 7

²⁵ The Mount Isa Line Rail Infrastructure Master Plan, 2012, in its potential growth scenario table illustrates that future planning for rail lines needs a level of consideration in priority setting.

²⁶ Source: Table 8.2 Connecting SEQ2031. Alternatively it could be relegated to level 2 priority.

★ Freight train priority

In the absence of detailed freight, scheduling and revenue/cost recovery information, the following freight train hierarchy based on tonnage is described. However, it is acknowledged that tonnage may be biased toward high volume, low value supply chains rather than lower volume, higher value supply chains. Therefore the following describes a basis for discussion and further investigation²⁷:

- multi-trip scheduled freight trains on a single line carrying more than 5,000 tonnes per loaded trip (note that this is intended to include the unloaded return trip) – Priority 1 Freight Train
- multi-trip scheduled freight trains on a single line carrying more than 3,000 tonnes per loaded trip – Priority 2 Freight Train
- all freight trains carrying more than 2,000 tonnes per loaded trip - Priority 3 Freight Train
- all other freight trains – no priority.

Under this approach, some trains carrying livestock would receive no priority. Animal welfare risks from the prevailing passenger/freight policy must be considered before the decision to carry the freight is made. The issue of freight trains carrying livestock is both sensitive and complex and would need further consideration as part of any Rail Network Operational (Efficiency) Policy development.

➔ 5.1.4 An example: developing a Rail Network Operational Policy

The aim of any Rail Network Operational (Efficiency) Policy, aligning legislation/regulation and systems/processes, should be to ensure that the train services giving the greater benefit for Queensland, whether social or financial, are determined within a transparent framework and appropriately accorded operational priority – subject to maintaining the overall efficiency of the network. Overall efficiency would take into account maintenance and construction needs as well as operational efficiency, and may require a new guideline to give clarity for rail manager train controllers.

Such a new policy framework is needed to replace the current regulatory approach, which is somewhat of a one-size fits all model. The illustrative approach above is a step forward, while still suggesting that all Citytrains should be accorded a priority level, whereas only some freight trains would be.

If the notion of a Rail Network Operational (Efficiency) Policy is accepted, it needs to be developed further and in much more detail. It could, for example, be developed to base priority decisions on revenue and time sensitivity of freight cargo, and also for the time sensitivity of passenger trip purposes, both by time of day and day of week.

The QTLC suggests, for example, that Priority 1 and 2 Freight Trains on Priority 1 Freight Lines should receive operational priority over Priority 4 and perhaps Priority 3 Passenger Trains.

The potential benefits of introducing such a rail efficiency policy hierarchy warrants further investigation.

27 Whether tonnage, commodity type, sensitivity of different groups to the freight being carried or the sensitivity to reliability of arrival is the best measure or a combination of these requires further investigation. The intent is to find an attribute that discriminates between high, medium and low priority freight trains, so appropriate priority for their passage and determinations of priority after any delays can be allocated.

➔ 5.1.5 Challenges

As stated above, current rail policies provide priority for all types of passenger trains over any type of freight train and all freight rail lines are considered to be equivalent. Both policies need to be revisited, because:

- the passenger priority policy setting may not result in overall rail network use efficiency or produce an optimal outcome for Queenslanders
- when the former Queensland Government excised some, but not all, of the rail network for sale, this indicated that some freight lines were much more valuable than others.

The private sector needs as much certainty as possible for investment. The sale of Aurizon indicates the private sector will pay substantial funds for a business where a network and train paths are transparent.

If the current passenger over freight priority setting continues, and the efficient use of the rail network is artificially constrained, more freight may divert to the road and more road infrastructure may be needed.

The National Land Freight Strategy raised the issue of routes and infrastructure for freight as distinct from passenger transport purposes, but did not propose a means to do this.

The issues and challenges presented to date in this document highlight the need to review the current scheduled passenger train priority as legislated in the TIA. A new, beneficially-based Rail Network Operational (Efficiency) Policy would also greatly assist in planning for future rail infrastructure, which is currently based on the outcomes of a passenger priority policy.

Making more efficient use of the available rail network capacity is a key principle and will lead to a better approach to meet the forecast growth in freight and passengers. Only after the current capacity is best utilised, should rail infrastructure enhancement be funded.

The SEQ Capacity Improvement Study currently being undertaken, and the potential North Coast Line Study, may benefit from being conducted within a more efficient framework, rather than being constrained by existing regulations. These studies should also have an objective of optimising network efficiencies (along with other possible objectives). Such a policy may also contribute to supply chain efficiencies on Queensland's other major freight lines; section 4.3 refers.



➔ 5.1.6 Opportunities and priorities

The proposed Rail Network Operational (Efficiency) Policy is a mechanism that may improve the overall efficiency of the rail network capacity.

The outcome sought is an increased availability for freight trains to travel through the metropolitan Brisbane network at times when its use by CityTrains and Traveltrains is less critical. If this increased freight capacity is not made available and the current level of investment in the South East Queensland rail systems continues, the increasing demand for freight between Brisbane and Queensland's northern and western cities and regions will all have to be transported on road, and rail's modal share will continue to decline.

An interim option may be the review of Traveltrain and freight train path priorities on most Queensland rail lines, and/or Citytrain and freight train priorities through the Brisbane Service Area on weeknights and weekends. However, business seeks as much certainty as possible when making logistics decisions so that an interim priority reallocation may not achieve the Queensland Government's desire for more freight on rail.

The most desirable option would be to develop a Rail Network Operational (Efficiency) Policy on a more detailed and encompassing basis, but using the general approach illustrated above.

★ Summary

Current rail policies provide priority for all types of passenger trains over any type of freight train, and all freight rail lines are considered to be equivalent. Both policies need to be revisited.

Without a change in these policies, more freight is unlikely to be attracted to rail unless the rail network capacity issues are resolved by significant investment.

The potential benefits of introducing a rail efficiency policy hierarchy warrants further investigation.

Making more efficient use of the available rail network capacity is a key principle and will lead to a better approach to meet the forecast growth in freight and passengers. Rail infrastructure enhancement should only be funded once the current capacity is best utilised.

The ongoing SEQ Capacity Improvement Study and the potential North Coast Line Study may benefit from being conducted within a more efficient rail policy framework, rather than being constrained by existing regulations. These studies, and possible future studies in other rail systems such as the West Moreton, Western and South Western Systems should have an objective of optimising network efficiencies, along with other study objectives.

The QTLC and its stakeholders should strongly promote to the Queensland Government that the current policies and its legislation needs to be reviewed for the benefit of Queensland.

RECOMMENDATION

8. TMR, in collaboration with QR, review legislated passenger train priority with a view to seeking increased rail network efficiency and delivering overall benefits for Queensland and Queenslanders.

9. TMR, in consultation with QR and affected parties, develop a Rail Network Operational (Efficiency) Policy incorporating freight line, passenger and freight train hierarchies and use these to develop a rail operations trade off decision-making framework.

10. The Queensland Government review its legislated priorities to appropriately reference the Rail Network Operational (Efficiency) Policy.

11. TMR direct all rail planning to be based on the proposed Rail Network Operational (Efficiency) Policy.

5.2 Rail intermodal facilities

5.2.1 Role of intermodal facilities

Intermodal facility is a term describing any facility where transfer of freight between modes occurs. Under this terminology, any port is an intermodal facility where freight transfers between road and/or rail to shipping, or vice versa. Often the term is used to describe freight transfer between rail and road.

Examples are the Brisbane Multi-modal Terminal (BMT) at the Port of Brisbane or Brisbane Multi-User Terminal (BMUT) at Acacia Ridge and the Toll Terminal at Moolabin.

BMUT is Australia's first major multi-user rail terminal and is the main facility for freight to be transferred from the interstate standard gauge system to Queensland's narrow gauge network. During 2006/07, the terminal processed more than 270,000 TEUs²⁸.

5.2.2 Intermodal facility design requirements changing

With the change in contestability of freight cargo between road and rail, there has been ongoing change in the scope of intermodal facilities. As an example, the New South Wales Draft Freight and Ports Strategy lists over 200 intermodal terminals, while noting that many are effectively old grain silos and their function is time-dated²⁹. With longer, heavier duty freight trains being introduced, old rail grain terminals become uneconomical and fall into disuse.

There is a history of planned and protected intermodal facilities being subsequently abandoned in South East Queensland, for the same reason. This situation has occurred on the north of Brisbane where Sunshine was being considered as a northern version of the BMUT at Acacia Ridge. This was then replaced by Fitzgibbon due to Sunshine's train size servicing constraints, but now Fitzgibbon's use is not feasible for the same reason.

The former Pine Rivers Shire Council was preserving an intermodal facility in Brendale many years ago.

5.2.3 Planned intermodal terminals in South East Queensland and inland ports

Currently, no potential northside Brisbane intermodal facility is being overtly planned for by the Queensland Government or preserved in local government planning schemes. The Moreton Bay Integrated Transport Strategy considered a potential location in north Elimbah. The potential North Coast Line and current SEQ Capacity Studies may also influence planning for a northside intermodal facility. The SEQ Capacity Study needs to consider also the functions of the BMT and BMUT in terms of facilitating IMEX container movements to the Port of Brisbane.

On the southside, planning has occurred for an intermodal facility at Bromelton. This would replace the former planned intermodal facility near Paradise Road/Logan Motorway, Parkinson/Larapinta, which had been retained by Brisbane City Council but was then determined not to have sufficient size to cater for the longer freight trains being planned for.

Planning has also occurred for an intermodal terminal at Ebenezer near Ipswich.

Charlton Wellcamp, west of Toowoomba, has been proposed by governments as the site for an inland intermodal terminal. As well as being described in the South East Queensland Regional Plan (SEQRP), it has been included in the new Toowoomba Regional Council planning scheme.

This history indicates that as viewpoints about competitive train lengths increase, it is important that intermodal terminal planning is updated accordingly. If necessary, this may mean that former planned facilities be abandoned and new ones developed. State and local government master planning has been developed to align the planning of industry, government and the community. This enables local government and other infrastructure providers to respond to any change in circumstances.

²⁸ Queensland Rail website, 24 February 2013.

²⁹ Page 99, second column, first paragraph, NFPS

➤ 5.2.4 Rail Freight Operational (Efficiency) Policy and intermodal terminal planning

All planning occurs within a policy and infrastructure capacity context, and in Queensland, intermodal terminal planning is predicated on scheduled passenger trains receiving priority. Current intermodal planning needs to reflect the context of the increasing access difficulty for freight trains passing through the Brisbane Service Area, and also to take account of the extent that this may be moderated by potential new infrastructure such as Cross River Rail.

It is not known whether and to the extent a Rail Network Operational (Efficiency) Policy would affect planning for future intermodal terminals, but it is likely to have some impact. For example, it may impact on whether and when a northside Brisbane Intermodal Facility is required.

The QTLC also notes that the level of demand from northern Brisbane already, and the extent freight is being railed to Acacia Ridge or Moolabin, is not publicly known, nor the access difficulties for freight train paths from the BMUT at Acacia Ridge to the north of Brisbane.

Whether an intermodal facility on Brisbane's northside would lead to greater flexibility for rail freight, or can be justified, would need further investigation under the existing and potential new rail freight operational policy. Any such investigation should be contrasted with an efficiently upgraded BMUT at Acacia Ridge and the Toll Terminal at Moolabin and be applied within the circumstance of the proposed Rail Network Operational (Efficiency) Policy. That is, a part of the northside intermodal terminal investigation should consider any efficiencies and increased capacity able to be delivered at Acacia Ridge and contrast this in financial terms against the potential for a Brisbane northside intermodal facility, adding value when compared with the optimised base case.

Such an investigation should determine:

1. if a Northside Intermodal Terminal can be substantiated and if so, how it should be progressed, including preservation of any potential site and its incorporation into the state government regional planning and local government planning schemes to avoid the site becoming constrained or neutralised by future development; or
2. if such a terminal cannot be substantiated, it should not be referred to further as an opportunity, and state and local government planning be amended accordingly.

The majority of Brisbane's rail freight generators/industrial areas lie on its southside, and the cost of road transport through Brisbane's congested roads to a northside facility could be considerable. This factor should also be part any investigation. The investigation should also consider freight train access to the Port of Brisbane from the North Coast Line, if demand exists.

These considerations would apply equally to a review of other planned intermodal terminals at Ebenezer, Bromelton and Charlton Wellcamp or any other review of intermodal terminal location.

In the medium to long term, more efficient intermodal and potentially multi-user terminals in major regional centres may be a necessary enabler for rail freight development. Consequently, the need to investigate the demand for intermodal terminals in northern and western South East Queensland and in regional centres, their viability and potential locations would be a high priority action. Similarly, preservation of justified sites in regional or local planning should follow.

RECOMMENDATIONS

12. TMR investigate the demand and financial viability of proposed intermodal terminals including costs and benefits for increasing rail freight utilisation and efficiency between central and northern Queensland, metropolitan Brisbane and its port and act to protect suitable sites in planning schemes.



6.0 ROAD FREIGHT IN QUEENSLAND

✦ Road freight growth forecasts and capacity challenge

The Centre for Transport, Energy and the Environment (CTEE) forecasts significant and challenging growth in Queensland's road freight task of 71.6% in the next 10 years as referenced in Figure 2.5. This growth is unlikely to be evenly distributed on the major road corridors serving regional Queensland. Areas with most population growth, and regions with major mining developments or agricultural production, will be most impacted, but growth in freight transport is expected to occur in all parts of Queensland.

The Queensland Transport and Roads Investment Program 2012–2013 to 2015–2016 (QTRIP) describes Queensland's state-controlled road assets and investment program: 'Of the 33,328 kilometres of state-controlled roads, 5,105 kilometres forms the National Land Transport Network (NLTN) in Queensland. The replacement value of these roads is \$55.45 billion, which makes them the Queensland Government's largest publicly-owned infrastructure asset.'

Funding for enhancement of the 5,105 kilometre NLTN in 2012/13 is \$1,349.9 million, excluding maintenance and reconstruction funding, and for the other non-NLTN state-controlled roads is \$1,293.1 million.

This rate of enhancement investment is unlikely to be sufficient to cater for the forecast growth in freight and passenger traffic. For example, the Bruce Highway Action Plan (BHAP) of October 2012 is seeking \$6 billion over one to four years for High Priority 1 infrastructure improvements, with more than \$4.5 billion in High Priority 2 suggestions in years five to seven. Thus the potential funding for just one of Queensland's six regional NLTN highways and numerous urban highways would more than consume the next seven year's NLTN investment at the 2012/2013 rate.

Being cognisant of the state government's current funding situation, this report considers approaches other than large-scale infrastructure enhancements to improve the supply chain efficiency for road freight.

Making more efficient use of the available capacity is again a key principle. As Chapter 5 developed new approaches for rail, this chapter seeks efficiency initiatives for road. It investigates or suggests:

- how Queensland's Heavy Vehicle Access Policy could be improved for the benefit of all
- consideration of heavy vehicle and road corridor crash rates to improve safety
- refinement of Priority Road Freight Route (PRFR) hierarchy levels, criteria and designation leading to government and private sector savings
- embedding Priority Road Freight Routes (PRFRs) in planning schemes for protection from and by encroachment so they are not degraded and new ones do not have to be built
- opportunities for local governments to facilitate road freight efficiencies.

6.1 Access and regulation

➔ 6.1.1 Background

Most vehicles on Queensland's roads are unrestricted. They can go on any state or local road as-of-right. Where vehicles or their cargo exceeds standard mass or dimensions, restricted access arrangements may be granted. Such vehicles are termed restricted access vehicles (RAVs). Policy arrangements exist to ensure the safe and efficient movement of RAVs and heavy vehicles carrying large indivisible articles within Queensland.

Typically, RAV operators have to seek approval of the road manager, which may be TMR and/or a local government.

Safety and efficient movement of RAVs depends on the characteristics of the road and the volume of other road traffic. In remote areas, road trains may be approved under guideline for as-of-right access. In other more trafficked areas, or where the road is geometrically more challenging, a permit may be required or the road train not permitted without breaking it down (uncoupling trailers into smaller vehicle combinations).

For very large or heavy RAVs, an individual permit must be sought. In other circumstances, concessional loadings may apply, or a period permit may be sought where the type of RAV travels repetitively on a regular route.

Guidelines were introduced to gain efficiencies from the permit approval process, so that the same RAV (for example a B-double), doing the same trip carrying the same load did not have to apply continually for single trip or period permits. Guidelines for different RAVs for different networks have been developed.

With new vehicle technology and design combinations, many different multi-combination vehicles (MCVs) have been developed to gain efficiencies for the different types of commodities being carried. As well, a special purpose vehicle and special purpose trailer categories include emergency vehicles, harvesters, pumps, drilling rigs, cranes and the like.

The plethora of RAVs led to governments agreeing to new processes to categorise vehicles with common performance standards as Performance Based Standards (PBS) vehicles.

The PBS process was introduced in an attempt to provide national innovation and a single rather than multiple state and territory approvals using different processes. As stated in section 4.1, it is understood that after nearly a decade of planning and operation, the PBS process has resulted in approximately 1,000 PBS vehicles being approved. While this is just more than 1% of Australia's articulated truck fleet, significant benefits still accrue to industry to justify the resourcing necessary to design and build the vehicles and seek their approval.

The QTLC acknowledges and supports the significant effort of TMR in managing freight movements during, and when recovering from, disasters, and the application of lessons during these times to form a 'one-stop shop'. The QTLC is strongly supportive of this initiative while it continues to produce supply chain efficiencies.

Queensland, like Western Australia, has a long history in allowing improved access for RAVs to its road network, for example, the recent introduction of A-Doubles – an MCV able to carry two forty foot containers – between the Port of Brisbane and west Toowoomba, where they can access Type 1 Road Train routes. TMR notes that the introduction of these PBS2B type vehicles resulted in a 50% reduction in truck trips where they were replaced by such a MCV between October 2010 and July 2011, or 5,100 truck trips or approximately 17 trips per day per direction. TMR estimates savings of:

- 1.8m VKT
- 650,000 litres of diesel
- 1700 tonnes of greenhouse gases
- 21% reduction in equivalent standard axles which will reduce the need for road maintenance.

The above highlights the environmental aspects relating to RAV access.

Nevertheless, industry reports frustrations with the complexity of the RAV application process, the lack of transparency of decision-making, delays in decision-making and reasons for decisions, the absence of processes for appeal rights, the need to continually apply for OSOM movements previously approved, and apparent duplication of national and state processes.

In response, the QTLC undertook a review of the information available to industry regarding processes, timelines and work-flow systems where RAVs are required to apply for and operate under permit. It subsequently produced, Reduce the Red Tape, an Access Permit Issues Paper, August 2012.

While its findings and suggestions are incorporated in this report, challenges and opportunities remain and these are outlined below.

➔ 6.1.2 The challenge of productivity versus preservation

Both industry and the public sector consider road safety to be pre-eminent, so although this aspect is a key matter for access considerations, it is not discussed further.

In Queensland, the approving entity, TMR, is also generally the potentially affected road manager. This creates a perceived conflict of interest, because TMR, as the road manager, does not benefit from any RAV approval, but bears the asset risk from it. Understandably, TMR seeks to preserve its \$55 billion asset for which it receives constrained maintenance and enhancement funding.

This situation has the potential to create an arduous RAV approval process, particularly where asset technical experts in bridge and pavement areas are involved in the approvals process.

However, the costs of the following are borne by other parties that have little or no influence over TMR's RAV approval processes or decisions:

- more vehicles on the road to carry the same freight
- increased exposure of all road users to more trucks
- higher purchase prices for the goods carried on less efficient vehicles
- Queensland being less competitive.

Prior to 2009, Queensland Transport was the approving entity for RAVs, when it was separate from Main Roads as the road manager. In this circumstance, Queensland Transport sought to balance industry productivity and road manager preservation perspectives. It also mitigated industry conflict of interest concerns.

With the amalgamation of the former Queensland Transport and Department of Main Roads, industry concerns have grown.

During the period of separate and joint state agencies over the last couple of decades, the Road Freight Industry Council has existed as a consultative mechanism. It is broad in scope and membership and in spite of its interaction with the Queensland Government, the matters discussed in this report have been identified for resolution.

Growing industry concerns and the findings of the Reduce the Red Tape paper indicate that a strengthened and/or more focused private public advisory model may be warranted.

➔ 6.1.3 The Western Australian private/public advisory board model

The same situation exists in Western Australia as in Queensland, where the approving entity, the Heavy Vehicle Operations branch (HVO), is a part of MRWA, the road manager.

Like Queensland, Western Australia has a long record in high productivity vehicle (HPV) access. Industry and its clients also had concerns about the level of transparency of RAV access processes.

As in Queensland, the Western Australian Government understands the importance of freight and OSOM movements to the state economy. Figure 2.1 shows the extent both state economies rely on key industry sectors that generate a high freight transport demand.

Following the 2012 Out of Gauge Coordination Unit report for the Freight and Logistics Council, Western Australian (FLCWA)^{31,32}, the Minister for Transport and Treasurer approved a high level five member advisory board, independently chaired and comprising senior public and private sector representatives, to oversee the new one-stop shop OSOM Unit. This Advisory Board commenced on 31 January 2013.

Its role is to ensure that OSOM movements are facilitated and blockages addressed consistently without reducing road safety, and that governance, transparency, processes and systems are in place to ensure a best whole-of-state, rather than a road asset preservation outcome.

The advisory board is not involved in any RAV assessment, but provides a focussed forum for facilitating efficient road freight and supply chain movements through resolution of public and private sector concerns.

The National Heavy Vehicle Regulator (NHVR) commenced in early 2013, and its objective is to harmonise vehicle access nationally without duplicating current processes.

The Chapter 3 analysis of the NFPS data indicated that long haul interstate road freight between adjacent states and Sydney may be in the order of 2%. From an industry perspective, it is crucial that intrastate heavy vehicle access best balances productivity with preservation.

A high level advisory board would be expected to deliver efficiencies for Queensland's supply chains, and in turn, contribute to the development of NHVR processes.

A high level advisory board can also represent to government and industry for appropriate funding for RAV processes, resources and low-cost infrastructure blockage treatments, the latter in the context that the OSOM model in Western Australia operates within a full cost recovery business model.

There is clearly a potential role for such a public/private sector advisory board to have a greater role and function than described in this sub-section only.

Section 4.2 highlights that members of the private/public sector Advisory Board also contributed to the development of the new funding model for addressing low cost infrastructure blockages for the benefit of both industry productivity and government asset preservation.

RECOMMENDATION

13. The Queensland Government appoint a high level private/public sector advisory board, independently chaired, to facilitate transparent RAV systems, processes and decision-making criteria to better balance freight efficiency and economic objectives, productivity, with asset preservation and road safety.

³¹ Out of Gauge Coordination Unit, *Pekol Traffic and Transport for the Freight and Logistics Council, Western Australia (FLCWA)*, May 2012

³² It was announced on 30 January 2013 that the Chairman FLCWA, Professor Fred Affleck, would be the inaugural chair for its first year.



➔ 6.1.4 Performance indicators for access assessment

The road freight transport industry has an expectation that TMR will develop and measure performance against performance indicators (PIs) for different types of RAV assessment, as is done in other states. For example, in Western Australia the HVO has a key performance indicator (KPI) of approving or rejecting permit applications within 24 hours or 48 hours, including a bridge assessment. Any new advisory board will receive reports on how this is being delivered.

By way of contrast, the NHVR is seeking a one-month PI for its RAV assessment processes.

The PI for route assessment for the same prime mover/ vehicle combination carrying the same load on the same route should all be within 24 hours. It is understood New South Wales has turned these around within one hour, using modern systems.

If Queensland replaced its existing system, the PI for other route assessments by already registered RAVs could be a very high percentage – for example 80% achieved within 24 hours, including the structural assessment – provided the application is submitted electronically the afternoon before. With a modern RAV system in place, the assessment of most MCV/RAV applications on most roads will have already occurred.

If a RAV or OSOM movement has been audited, it is then possible a period permit could be issued for the same applications in Queensland, as occurs in some other states.

Assessment of new RAV types will generally take longer. A PI for this type of assessment is also needed, particularly in light of reported situations where applications have taken up to two years for approval or rejection.

The National Heavy Vehicle Regulator (NHVR), commencing permit processing in mid-2013, will impose decision-making processes, timeframes and accountabilities for managing heavy vehicle access permits on jurisdictions.

The PIs suggested above may be much shorter than those being proposed by the NHVR. Any PIs will need to be negotiated with all states so they become the minimum allowable or ‘lowest common denominator’. The NHVR would encourage states to substantially improve on its PIs if they were able to do so.

In any event, with PIs for certain RAV assessments already being achieved by other state road agencies, there will be expectation within the Queensland road transport industry for similar or better outcomes here, once the necessary systems and processes are in place.

Queensland’s economy may be impacted if its PIs are not at the standard of comparable states with similar key industry sectors, as detailed in Figure 2.1.

RECOMMENDATION

14. TMR should, independently of the NHVR, establish its own PIs for RAV approval and route access by RAVs, based on best practice in other states.

➔ 6.1.5 RAV assessment processes, criteria, processes and technology

The QTLC desktop review of access procedures highlighted concerns for RAV vehicle and route assessment in the areas of its access criteria, process design, enabling technology and some instances of regulatory duplication. It found protracted assessment duration leading to inefficient resource use and likely ineffective outcomes, which may not provide best value for Queensland. These concerns are discussed in the following sub-sections.

✦ RAV and HPV access criteria

This sub-section discusses the sub-set of RAVs which are high productivity vehicles (HPVs)

TMR's processes reflect the legislated objectives of safety and asset management. The QTLC acknowledges the importance of these objectives, and also supports broader access objectives encompassing:

- **Efficiency:** HPVs minimise the number of freight vehicles transporting freight and thus reducing safety exposure risk.
- **Safety:** New HPV design and technology delivers a much safer vehicle per tonne of cargo carried, as well as a less arduous driving environment to mitigate fatigue.
- **Economic:** HPVs reduce the cost of freight transport, providing benefits for the Queensland economy.
- **Sustainability:** HPVs use less fuel per tonne of freight and can reduce asset deterioration.

As noted in section 6.2 below, the National Truck Accident Research Centre found that in 2009, and in terms of loaded tonne-kilometres, B-doubles were about 2.5 times safer than semi-trailers. This type of road safety statistic needs to be explicitly incorporated into HPV access decisions. (Later in this report we discuss integration of HPV access and land use.)

RECOMMENDATION

15. TMR review its HPV access processes to include efficiency, safety, economic and sustainable objectives as outlined, along with asset preservation and HPV safety for access assessment criteria.

The key aspect in conducting any HPV access review is to do so under a private/public advisory board that is independently chaired. This will provide equal ownership of the resulting process for the industry, TMR and the broader Queensland Government.

✦ Process efficiency

Reduce the Red Tape indicated some permit approval durations were unacceptable and exemplified AAB quads, over-dimensional and special purpose vehicles and PBS issues. The QTLC recommended that TMR, ahead of the introduction of the NHVR, undertake a review of the efficiency and management of heavy vehicle permits in Queensland. It further found that TMR processes suffered from:

- 'poor process information and workflow systems'
- 'arbitrary decision-making and a lack of transparency', and this led to
- 'poor permit approval timeframes'.

The Reduce the Red Tape audit recommended TMR should facilitate easier application processes, provide feedback mechanisms and enable greater transparency.

A head of power exists within TMR for an access appeal process. It is not known whether this has been used to review a HPV access decision.

For appeals against decisions not to approve a RAV permit, section 65, Chapter 4 of the *Transport Operations (Road Use Management) Act 1995*³³ (TORUM) provides that:

1. A person whose interests are affected by a decision described in schedule 3 (the original decision) may ask the chief executive to review the decision.
2. The person is entitled to receive a statement of reasons for the original decision whether or not the provision under which the decision is made requires that the person be given a statement of reasons for the decision.

³³ Queensland legislation website, accessed on 24 February 2013.

The TORUM, in (3) specifies that the *Transport Planning and Co-ordination Act 1995*, part 5, division 2 applies and specifies the procedure and that the applicant can apply to the Queensland Civil and Administrative Tribunal (QCAT) for the Chief Executive Officer decision to be stayed.

If the internal TMR appeal is not successful, section 65A of TORUM states the applicant can seek an external review by the QCAT.

It is also important that the HPV access and appeals process does not lead to vexatious appeals which can consume TMR's limited number of expert resources. The proposed public/private sector advisory board may play a role in ensuring this does not occur.

RECOMMENDATION

16. TMR review its permit processes and act to deliver the administrative process improvements, transparency and appeal rights as noted in this report .

TMR should consider the balance of its access permits and mechanisms. Reduce the Red Tape found while TMR's policy intent is to reduce the number of permits, in reality the number of permits is growing significantly. Over the last three years from 2010, the number of permits issued rose from 16,473, to 18,028 in 2011 and in the first six months of 2012, the number of permits issued exceeded 18,600.

In the past the 'rule of thumb' was that if permit numbers exceeded 10,000 per annum, this number was excessive and would lead to inefficiencies, and that some permit types should be converted to period permits or guidelines developed for them.

This issue should be considered in a permit process review but the overriding issue is ensuring that the access assessment process is consistent with the risk due to the HPV access being considered.

RECOMMENDATION

17. TMR consider its permit delivery mechanisms to ensure that the number of permits is reduced consistent with the risks of the RAV/HPV/OSOM access sought.

✦ Eliminating administrative duplication

Under the PBS process, and after receiving the approval, applicants then apply to individual jurisdictions for access to the road network via a PBS permit. Reduce the Red Tape found that TMR was 'requiring every PBS vehicle be subject to a full assessment process, regardless whether the combination has been previously assessed and approved, even for the same route'.

This issue, if widely occurring, needs to be addressed by the NHVR and TMR.

RECOMMENDATION

18. TMR and NHVR liaise to ensure there is no duplication of administrative assessment processes.

✦ Enabling systems

TMR's RAV assessment and management system is at least a decade old. It was developed within a different paradigm than that outlined above.

Emerging technology advances means it is now outdated. TMR requires a modern system that:

- stores and can search previously approved permits to eliminate duplication, while protecting privacy
- enables application tracking
- uses modern assessment technology such as the ARRB's PBS Route Assessment Tool
- integrates with other systems, such as the 13 19 40 real-time road operations to provide information
- meets modern IT concepts, so is scalar, modular and expandable.

By modernising its system, TMR will be able to more easily deliver improved service and tracking of applications, better decision-making and enhanced outcomes for Queensland. The QTLC strongly supports TMR investing in modern systems.

RECOMMENDATION

19. TMR to procure the necessary enabling technology to improve the efficiency of the RAV access management processes.

★ Cost recovery

The cost of assessment processes and the resources employed are likely to exceed the revenue reimbursed by charges from the road transport industry. This may be acceptable if the assessment process was efficient and added value for Queenslanders.

There is rationale for a full-cost recovery business model to be established for RAV assessment, as is the case in Western Australia. In this event, the applicants would bear the cost of assessment but derive the resulting benefits from greater HPV access if approved.

For this to happen, the state government would need to:

- establish an independent review of the access assessment objectives and process
- implement its findings to achieve a more efficient and effective access assessment process
- establish an advisory board.

This discussion does not imply payment for access, as the charge relates to the application and assessment process, and government must refuse applications which do not demonstrate that they meet or exceed the criteria for the type of RAV and route being applied for.

RAV HPV access and assessment processes and related systems need to be changed to improve their efficiency. In the meantime, it is not fair or equitable for industry to bear the cost of inefficient systems.

RECOMMENDATION

20. TMR and the NHVR only consider a full-cost recovery model for RAV HPV access applications when efficient assessment processes and systems have been developed.

➔ 6.1.6 Using police for OSOM escorts – value for money

The Queensland Police Service provides escorts for the larger categories of OSOM movements. Until January 2013, this was the case in all Australian states.

The Out of Gauge Coordination Unit report recommended that this police escort function be transferred from the Western Australian Police to the Department of Main Roads Western Australia (MRWA). There is more detail provided in the report and issues addressed during the implementation process but the following are the key facts.

In Western Australia, the police had already established a category of non-sworn police called traffic wardens. These used police vehicles but had limited police powers suited to their escort role. However, the police provided an overload option, where the number of traffic wardens could not meet the OSOM movement demand. The Western Australian Government considered it inefficient to have highly trained police performing a traffic function, albeit one for which limited police powers and the visibility of their vehicles were essential.

On 1 January 2013, the police escort function for OSOM movements passed to the MRWA. The use of appropriately trained, certified and branded MRWA staff and contractors should ensure the same escort performance level, no loss of safety, a reduction in the cost of large OSOM movements needed to service supply chains, and a reduced call on police resources.

The QTLC is supportive of working with others to improve this aspect of supply chain efficiency.

RECOMMENDATION

21. The Queensland Police Service investigate the transfer to TMR of the police escort function for large OSOM supply chain input movements, providing TMR can achieve the same performance level, with no reduction in safety but a reduction in OSOM movement and police costs.

6.2 Aligning freight and land use planning

In Chapter 5, a policy mechanism was proposed to aid efficient rail network use in order to meet the growing freight task. In this section the same is applied for roads.

Priority Road Freight Routes (PRFR) have varied during the last decade in their number of levels, criteria and designation. Local governments have not incorporated priority road freight routes into planning schemes because there has been no requirement to do so.

This section outlines an approach for determining PRFRs³⁴ (PRFRs) and strongly advocates their inclusion in local government planning schemes so they can:

- be protected by local government planning schemes from encroachment by inappropriate development
- inform HPV access
- be operationally managed to facilitate freight flow
- be planned and funded, so infrastructure enhancement for freight purposes can be appropriately prioritised.

The section also notes that Queensland PRFR designations have lacked consistency, so that industry cannot rely on them in planning for improved supply chain efficiency.

➤ 6.2.1 Priority freight route history, description, and criteria

Prior to 2005, when Queensland announced its priority freight routes in the inaugural South East Queensland Regional Plan, no Australian state road agency had publicly stated whether it had priority freight routes or where they were.

The Guidelines for Freight Routes in Urban and Rural Areas, AP_R316/07, report developed by Austroads in 2006 recognised the special demands of freight in planning and investment processes. It provided guidelines for state and local governments to do so, acknowledging Queensland's PRFR approach in South East Queensland. It is an informative background resource, particularly with its emphasis that jurisdictions can make freight routes public without necessarily drawing adverse community reaction.

³⁴ Rail networks have quite limited access to land use development compared with road, so the value of embedding their priority freight routes into planning schemes needs further consideration. With increasing concern over the noise, dust and wind-blown cargo impacts of rail use, this could be considered further.



✦ South East Queensland Regional Plans (SEQRP) Priority Freight Routes

The 2005 inaugural SEQRP by the former Office of Urban Management was released in 2006. It announced South East Queensland's Priority Freight Routes. The two-level Priority Road Freight Routes were established by the meeting of an articulated and truck numbers criteria as a surrogate for freight flow volumes generated by supply chains as follows:

- **Priority 1 Road Freight Routes** are those that carry over 1000 articulated vehicles (including B-doubles) per day.
- **Priority 2 Road Freight Routes** carry between 250 and 1000 articulated vehicles (including B-doubles) per day, and a total of 1000 commercial vehicles per day.

The then Queensland Transport nominated all rail lines serving regional Queensland as Priority Rail Freight Routes, as discussed in Chapter 5.

The South East Queensland Freight Network Strategy 2007-2012, jointly released by the former Department of Main Roads and Queensland Transport, transcribed the 2006 SEQ Regional Plan freight routes, with some added details based on further research.

Subsequently the 2009 SEQRP by the former Department of Infrastructure and Planning (DIP) decided on the same criteria, but presented a slightly refined two-level Priority Road Freight Route hierarchy (but again just a single level for rail lines) in Maps 25 and 26.

✦ Connecting SEQ2031

There seems to have been some conflict under the previous government between TMR and DIP over leadership on Priority Freight Routes.

On the inner southern corridor – Granard, Riaweena, Kessels and Mount Gravatt-Capalaba Roads – TMR prohibited through truck movements and installed ITS enforcement.

In its 2011 Connecting SEQ2031, TMR provided a single level priority road freight route under a 'high volume, business to business' principle, but without explicit criteria. Its Priority 1 Road Freight Routes are fewer in number compared with the SEQRP but include the Airlink tunnel, which opened subsequently. Other roads shown as PRFRs in both the SEQRPs and carrying significant freight volumes were not nominated in the Connecting SEQ 2031 document.

✦ IFSQ and State-controlled Priority Road Network Investment Guidelines, 2011

In other areas TMR followed the DIP lead.

In the same year as the Connecting SEQ2031 was released, TMR released the Integrated Freight Strategy for Queensland (IFSQ) and the (unpublished) State-controlled Priority Road Network Investment Guideline (RNIG) was completed. Although these only reported the SEQRP Priority 1 Road Freight Routes, in these two TMR documents the routes nominated were consistent with the SEQRP ones, and were expanded to provide a priority freight network for all Queensland.

The criteria for determining these Priority Freight Routes were not stated in the IFSQ. The RNIG gives some details in an appendix about the criteria for the priority road freight routes, but it is less clear how TMR may have applied these to designate particular road sections. The RNIG does not state whether its processes or determination benefitted from external consultation.

It states a Priority Road Freight Route is a subset of the PRN and should receive 'additional considerations [apply] for special heavy vehicle usage of some freight routes such as B-Triples, HML, HLP and MCV. Key freight routes will receive particular consideration for overtaking opportunities, bridge strength, bridge width, intersection geometry, heavy vehicle rest areas and stopping places.' Special consideration also applies to their road planning and design standards.

✦ BCC Draft CityPlan and freight routes

Recently the Brisbane City Council has released a draft City Plan for comment. It contains a transport network categorisation, combining the traditional road hierarchy approach (motorways, arterials, and the like) with a two-level freight hierarchy.

This document is intended to replace the 2000 Cityplan which had a four-level freight hierarchy.

Neither document aligns completely with the Queensland Government documents.

☆ Toowoomba Sub-Regional Transport Study

In an unpublished freight working paper, TMR's Toowoomba Sub-Regional Transport Study (TSRTS) proposes a three-level priority road freight hierarchy³⁵, with a viewpoint that this would be incorporated into Toowoomba's Planning Scheme, following comment and refinement in a further stage of the study³⁶.

The criteria were nominated from a view point that application of similar criteria elsewhere in Queensland would produce consistent PRFR outputs. However, this is yet to be tested.

The TSRTS states:

Criteria [for a three-level road freight priority] included the:

- volume of the freight flow (as expressed in Mtpa GVM) – noting that this can change significantly even within the Toowoomba urban area
- moderation by the AADT (which also changes on the same road in Toowoomba).
- proportion of heavy vehicles.

The criteria for a three-level hierarchy and the business rules for the integration of the hierarchy within a road use priority framework are:

1. Where all three of the following criteria are met the route is a **Priority 1 Road Freight Route**:
 - 1a. AADT > 10,000
 - 1b. Heavy vehicle proportion > 10%³⁷
 - 1c. Freight flows > 5 Mtpa GVM.

Where there is a section of a Priority 1 Road Freight Route that still complies with two out of three of the above criteria, it remains a Priority 1 Road Freight Route.

Business rule

A Priority 1 Road Freight Route must have freight as the highest priority road use for that section of road.

For a Priority 1 Road Freight Route, all road operations and land use approvals must improve, support and/or give priority to freight flows. Any road operations or land use decisions that impact negatively on freight flows must not be approved, other than for safety reasons, and direct property access should be discouraged.

2. Where all three of the following criteria are met the route is a **Priority 2 Road Freight Route**:
 - 2a. AADT > 2,500
 - 2b. Heavy vehicle proportion > 15%
 - 2c. Freight flows > 5 Mtpa GVM.

A Priority 2 Road Freight Route must have freight at least as the highest priority road use for that section of road. If a road section lies within or serves industrial areas, and item c. exceeds 3 Mtpa GVM, it also is a Priority 2 Road Freight Route.

Business rule

For a Priority 2 Road Freight Route, all road operations and land use approvals must improve, support and/or give priority to freight flows. Any road operations or land use decisions that impact negatively on freight flows must not be approved, other than for safety reasons. Direct property access should ensure entry and exit is possible by large heavy vehicles.

3. Where two of three of the following criteria are met the route is a **Priority 3 Road Freight Route**:
 - 3a. AADT > 10,000
 - 3b. Heavy Vehicle proportion > 10%
 - 3c. Freight flows > 3 Mtpa GVM.

A Priority 3 Road Freight Route may have freight as the highest priority road use for that section of road, but must have freight as a second or third priority.

Business rule

For a Priority 3 Road Freight Route, road operations and land use approvals must facilitate freight flows, but balance this with supporting other road use priorities.

As well, all three levels of freight routes, as with TMR's key freight routes, must be developed and operated to facilitate freight flows, including the removal of physical and operational constraints to access by freight efficient vehicle types wherever possible.

³⁵ In Chapter 5 of the TSRTS Freight Working Paper 4

³⁶ The PFR approach was in the context of aligning freight, general traffic, cycling and walking priority use of roads in another working paper along the lines articulated in VicRoads SmartRoads guidelines, but it doesn't specify criteria for determination of priority use.

³⁷ Note this is the same heavy vehicle number criteria used in the 2005 SEQRP for Priority 1 Road Freight Routes.

★ Developing PRFRs

By using the above criteria in the TSRTS:

- all National Land Transport Network roads were classified as Priority 1 Road Freight Routes
- most roads in industrial areas and linking roads between industrial areas and Priority 1 Road Freight Routes were classified as Priority 2 Road Freight Routes
- major roads linking Priority 1 Road Freight Routes were nominated as Priority 3 Road Freight Routes.

Thus the criteria used in the TSRTS produces a sound basis for road planning, design and operations, HPV access management (discussed in section 6.1) and development assessment of adjacent land use by local governments.

There are potentially significant benefits to industry and the community if TMR progresses its PRFR.

As such, the QTLC strongly supports the continuing work by TMR to develop a sound and stable framework for PRFRs.

Supply chain considerations will determine the freight demand for PRFRs. In this sense, the development of PRFRs should be informed by industry knowledge, especially about supply chain operations and logistics.

Nevertheless, the development of a three-level PRFR hierarchy in the TSRTS, and its linkage of the PRFR criteria with business rules that can be incorporated into local government planning schemes, is a major step forward.

The QTLC encourages TMR to progress its PRFR planning along the lines used in Toowoomba and is well placed to assist TMR with industry information if this were desired.

RECOMMENDATION

22. TMR develop its PRFR planning along the lines used in the Toowoomba Sub-Regional Transport Strategy.

The Queensland Government is developing Statutory Regional Plans and it would give certainty for industry and the community if PRFR planning was to be incorporated into this process.

RECOMMENDATION

23. TMR incorporate, if feasible, its PRFR planning into the Statutory Regional Planning program.

★ New South Wales Draft Freight and Port Strategy

The Transport for New South Wales's draft Freight and Port Strategy (NFPS) nominates a three-level road freight hierarchy in Sydney, Newcastle and Wollongong using criteria stated on page 148. This resulted in the designation and mapping on page 149 of a three-level PRFR hierarchy, the same number of levels as TMR developed in Toowoomba. The following criteria was used:

'Primary freight routes, which typically:

- serve the needs of freight transport for interstate access and to strategically important ports, airports, industrial areas, freight terminals, intermodal terminals and hubs within
- link major regions throughout the Sydney metropolitan area and connect it to rural regions across the state, and to other states
- incorporate the National Land Transport Network and other major arterials
- carry high volumes of heavy freight vehicles³⁸ in excess of 4,000 heavy vehicles average annual daily traffic (AADT), and high concentrations of live-haul, long distance, high productivity trucks.

'Secondary freight routes provide links for significant freight flows within regions. They may serve numerous major business and freight origins and destination within a regional area and carry medium volumes of heavy vehicles (1000 – 5000 heavy vehicles AADT).

'Tertiary freight routes provide connections from the local road system and the lower order elements of the state road system to the primary and secondary freight routes. They serve the numerous major business and freight origins and destinations within a subregion, and carry lower volumes of heavy vehicles (typically less than 2000 heavy vehicles AADT).'

Like the TSRTS, the NFPS also nominated the importance of the designated PRFRs being included in the relevant planning schemes.

³⁸ Extra research is required to establish what TfN used as the criteria for heavy vehicles, and whether this is articulated vehicles or all vehicles >3.5 or 4.5 tonnes.

✪ Need for a national PRFR approach

While the three levels of PRFRs are the same number in Toowoomba and Sydney, Newcastle and Wollongong, the criteria used to designate the levels are different. This is not unexpected, as the New South Wales conurbation has about 50 times the population of Toowoomba.

The similarities and differences in the TSRTS and NFPS approaches indicates more extensive research is required by a national road agency to align planning and processes for PRFRs. This research could be performed by the Austroads Freight Program, or possibly another national agency with freight, transport and land use planning/integrating capability.

(A similar need for national harmonisation was the rationale for creation of the National Heavy Vehicle Regulator.)

Care will be needed to ensure that the business rule numbers for the three PRFR levels are appropriate in capital cities, and other cities and towns and in regional areas.

Importantly and as discussed in the section 7.3 for the proposed Inland Freight Corridor, PRFRs need to be assessed in terms of their capacity to accommodate HPVs in terms of the national Performance Based Standards nomenclature.

That is, to facilitate HPV access it is necessary to determine the PBS class for each road/motorway, e.g. 2B (30m), 3A (36.5m) because this determines the standard the vehicle has to meet to access the road or motorway in question.

The QTLC is well placed to work with other state logistics councils and the Australian Logistics Council (ALC) to assist and support this research.

RECOMMENDATION

24. TMR support the Austroads Freight Program developing a research project/s to facilitate national consistency and transparency in PRFR criteria, determination and mapping of PBS capacity for each section of the PRFRs determined to guide planning.

➔ 6.2.2 Incorporating PRFRs in local government planning schemes

Once PRFRs are designated by the state, or by local governments as discussed in the next section, they need to be incorporated into planning schemes. This is crucial to ensuring their effectiveness, by protecting them from encroaching land use and protecting adjacent land use from the impacts of heavy vehicles using them.

The state has the power to develop a Statutory Planning Instrument (SPI) and this would ensure or facilitate (depending on whether the SPI was mandatory or not) incorporation of PRFRs into local government planning schemes, with associated business rules for development assessment conditioning.

Neither TMR nor the Department of State Development, Infrastructure and Planning (DSDIP), which is responsible for planning scheme regulation, has developed an SPI for PRFR and land use management, as was intended in the SEQRP and proposed in the TSRTS. As a result, the integration of PRFRs and adjacent land use has not managed as well as intended. The QTLC and its stakeholders are still raising 'last mile' issues for HPV access to major freight generators or major industrial areas.

No local government³⁹ has developed PRFRs for its local roads or incorporated one of the state versions of PRFR' into its planning scheme.

³⁹ With the possible exception of Brisbane City Council.

➔ 6.2.3 Challenges

Sub-section 6.3.1 demonstrates there has been a lack of consistency within Queensland agencies and nationally about:

- the number of levels in a PRFR hierarchy
- the criteria for determining each level of PRFRs, and whether the criteria are published and how designations are made
- the purpose of a tri-level hierarchy to assist local government development assessments
- how the PRFR criteria should reflect future planning, for example for a 20-year horizon.

Nor has there been progress within Queensland agencies in developing an SPI for incorporating PRFRs into planning schemes.

‘Last mile’ issues are still a sensitive issue with the road freight industry and local governments. Where rail lines connect to high freight generating land uses, they also may need statutory protection from encroachment by land use and on land use.

As shown in the New South Wales example – which determines PRFRs on a different basis to that which has occurred in Queensland to date – this is a national as well as a Queensland issue.

The funding required to construct a PRFR to a sufficient standard so it could accommodate HPV access is significant. However, it would not be economically efficient to downgrade an existing route from its PRFR function, particularly if funding then had to be found to upgrade an alternative route. This is not an expense road managers can afford.

Should a downgrading impact on the planned or approved use of HPV access, it could also impact on the viability of industry operators who made location decisions based on the PRFR function. In an extreme case, it may lead to business and its employees being closed.

While the sensitivity of PRFRs is acknowledged, the community and business sector like to have an awareness of issues relating to heavy vehicle use, so confident decisions can be made about where they live and locate. Local communities are particularly sensitive to planning that impacts them, but about which they were not informed.

An emerging issue that needs to be addressed is the planning of a sub-set of PRFR routes for OSOM movements of project cargo and plant. For the purposes of this report, project cargo means construction modules for new mines or energy projects. Typically, OSOM movement for this type of plant and project cargo will have dimensions that far exceed normal RAV movements. These dimensions may be 10m high by 10m wide by 40m long. As shown in Figure 7.10, even broken down dump trucks can weight 165 tonne.

Western Australia had planned three OSOM movement corridors running to the north, east and south of the Port of Fremantle, with envelopes of 10m high by 10m wide by 40m long. Between Port Hedland and Newman in the Pilbara, a 14m high by 14m wide corridor has been designated.

The purpose of these corridors is to accommodate OSOM movements that fit within the envelope not having to pay for the temporary shifting and relocation of road infrastructure and furniture on a repetitive basis. As well as reducing costs to the road transport industry and their clients, it reduces delays to other traffic when the road furniture has to be shifted and relocated.

Each of these routes – termed high, wide load routes in Western Australia – is being developed so the road infrastructure and furniture is located in a way that does not intrude into the designated envelope and the road is constructed to bear the design weight.

It is suggested that Queensland should progress similar planning for OSOM routes.



➔ 6.2.4 Opportunities and priorities

It is vital that Queensland's critical supply chain routes are identified, protected, planned, operated and developed to facilitate their freight carrying function.

The National Land Freight Strategy raised the issue of routes and infrastructure for freight as distinct from passenger transport purposes, but did not propose a means to do this. Developing PRFRs is a mechanism for achieving this in Queensland, and incorporating them into planning schemes would provide regulatory powers.

A consistent, long-run approach to determining PRFRs needs to be applied. Notably, the most recent work in Toowoomba and New South Wales has resulted in a tri-level concept of Priority Freight Routes. However, the number of levels of PRFRs should be determined by how much value they add to the planning, policy, design and investment and operation of road freight flows⁴⁰.

Supply chain considerations should be used in determining PRFRs and the development of these could be informed by industry knowledge, especially about supply chain operations and logistics. As with the development of a strategic freight model discussed in Chapter 3, the QTLIC and its stakeholders could provide information and advice to assist the state.

The Queensland Government also needs to develop a Statutory Planning Instrument (SPI) that will enable local governments to incorporate PRFRs into their planning schemes.

RECOMMENDATION

25. The Queensland Government to work with the QTLIC, its stakeholders and the LGAQ to develop, using transparent freight demand criteria, a single, multi-modal, multi-level freight Priority Freight Route Policy and Network for Queensland and its regions.

This will ensure PRFRs can:

- be included in, and protected by, local government planning schemes*
- inform HPV access*
- be operated to facilitate freight flows*
- appropriately prioritise, plan and fund infrastructure for freight flows.*

As part of PRFR planning, Queensland needs to plan and then develop special OSOM routes with dimensions to be established, but in the range of 10m, 10m, and 40m, for the movement of project cargo and plant for mining, energy and agriculture sectors.

⁴⁰ The same considerations apply for rail Priority Freight Routes and their number of levels.

RECOMMENDATIONS

26. The Queensland Government to develop an SPI for PRFRs in consultation with local governments, and ensure PFRFs are integrated into local government planning schemes, so that PRFRs can be included in, and protected by, local government planning scheme processes.

➤ 6.2.5 PRFRs and RAV access moderation

Organisations generating freight, and the road transport industry serving them, need to consider their business locations and the ability of the transport system to accommodate requests for increased access. As outlined in Chapter 7, TMR's current funding is limited to meet the transport needs of Queensland, and so is that of local governments.

The designation of PRFRs and their publication can and should be used by TMR and local governments to moderate continual requests for HPV access, especially by firms or their transport contractors where the business was located after PRFRs in the vicinity were published.

The supply chain efficiency principle in sub-section 6.1.5 does not imply unlimited HPV access; rather it seeks increased HPV access in a balance with other criteria and in a transparent way.

As well-run freight-generating firms respond over time to PRFR information becoming available, HPV access applications should become more easily assessable and approvable.

6.3 Local government freight challenges, opportunities and priorities

The QTLC acknowledges the challenges Queensland councils face to accommodate heavy vehicles on their network. However, the road freight task is rapidly increasing and there is an imperative for all levels of government to meet this demand for the economic benefit and prosperity of Queensland communities. The QTLC is committed to working with local government to meet these challenges and develop whole of supply chain solutions for a sustainable freight transport network.

➤ 6.3.1 Addressing 'first and last mile' issues through local government planning

The National Land Freight Strategy Update reported that one of the four key issues for freight was 'encroachment of/on freight activities'.

The Reservation and Protection of Land Required for Freight Logistics in WA FLCWA report provides a snapshot of the stakeholders and their planning processes in Western Australia that can be influenced to enable freight logistics corridors and industrial areas to be planned and protected. The report processes may be usefully applied in Queensland so that encroachment of/on freight activities can be obviated.

Local governments have a crucial and under-recognised role facilitating road and rail freight flows. This is through their planning and development powers discussed in section 6.3, but also through their management of local roads.

Local governments are primarily responsible for managing the 'first and last mile' network.

In Western Australia, 'first and last mile' access issues have led to the state taking over the responsibility for issuing RAV permits on local roads serving large freight generators such as ports, mines and industrial areas .

The Queensland Government may or may not seek to exercise a similar power on the relevant elements of local roads where there is agreement from councils.

✪ New planning requires government collaboration

Local governments may be concerned about the impact of allowing HPV access on the cost of maintaining roads. However, this is not the only issue for consideration regarding the ‘first and last mile’.

When local governments plan major industrial areas or allow for major freight generators, HPV access should be a concurrent consideration. This will improve supply chain efficiency and ensure there is planning for the type of road able to support the types of HPVs organisations might expect to be used to serve their businesses.

Local government planning for major greenfield industrial sites should include the designation of a PRFR connecting to a state-controlled road as well as its funding in the local government Priority Infrastructure Plan. This type of proactive planning would provide certainty to industry that road specifications servicing sites could accommodate access by appropriate HPVs. It would also inform the community of these planning decisions. Once included in its planning scheme, new development could be conditioned appropriately.

If the Queensland Government provided guidelines and support to facilitate a concurrent land use and PRFR planning process that provided for HPV access, ‘first and last mile’ issues arising from inadequate road specifications servicing major industrial areas could be built-out over time.

Ensuring integrating planning by local governments for major freight areas and HPV access will require strong collaboration between DSDIP and TMR, along with the support of the Local Government Association of Queensland (LGAQ). The QTLC has a role to play in facilitating this dialogue.

Once planning schemes provide for HPV access into some, but not all, areas, businesses will be able to make more informed decisions about locations. This will reduce the likelihood of businesses pressuring local or state governments for improved HPV access without appropriate funding or dealing with community concerns.

✪ Resolving HPV access to existing development

For existing industrial areas or major freight generators, resolving the ‘first and last mile’ issue is more complex. This is a long-standing issue, requiring the Queensland Government and local governments to work collaboratively on planning and funding issues in order to effectively address it. The key is to treat all roads and related issues as belonging to a single network, rather than considering them as ‘state’ and ‘local’.

The Queensland Government would have a stronger position to help local governments to plan and integrate industrial planning with HPV access, by providing:

- leadership in determining a more nuanced PRFR tri-level hierarchy
- a package comprising land use and PRFR planning and associated PIP guidelines supported by funding.

Through this approach, local governments could undertake a program to develop local roads linking major industrial areas of specified sizes/types, or major land use developments generating more than a specified level of freight demand, to allow HML and HPV access (to a specified level) to the nearest PRFR. While not addressing ‘first and last mile’ issues arising from freight movements to or from businesses not located in major industrial areas (i.e. to or from the farm gate), this would go some way to alleviating local access issues for industry.

A key priority is for the QTLC to advocate that the Queensland Government, LGAQ and key local governments develop an integrated approach to improve HML/HPV access between major freight generators/ industrial areas and the nearest PRFR or PRFR.

RECOMMENDATION

27. The Queensland Government focus TMR and DSDIP on developing a package of land use and PRFR planning guidelines, with advice regarding road design and property access for HML and HPV access, associated PIP preparation advice and sufficient funding to support this.

➔ 6.3.2 Local government PRFR designation

All local governments control some roads which carry significant numbers of heavy vehicles.

It is just as important for local governments to inform their communities and business of their planning for freight flows as it is for the state. Without adequate freight movement planning and information, there is increased capacity for local communities to be adversely impacted by HPV use (i.e. noise and environmental issues emerging from encroachment).

Without a designated local government PRFR hierarchy, local governments are unable to provide information to developers or residents about their freight planning and connectivity within the broader network.

In order to better manage freight encroachment on/by land use, local governments are encouraged to consider designating PRFRs in accordance with state-nominated criteria, once guidelines are developed.

In instances where a local road connects a major industrial area or freight generator to a state PRFR, local governments should consider designating such a road with an appropriate PRFR level. This would enable them to protect the route from encroachment by inappropriate development, or to condition such development in a way that protected its freight movement function and so resolve 'first and last mile' issues.

The designation of local roads as an appropriate PRFR would help local governments to identify strategic freight routes for the region, communicate better with local communities, as well as providing a basis for improved planning, PIP and/or funding access and infrastructure provision.

Without designating PRFRs, local governments are unable to openly plan for the appropriate functional design, maintenance and enhancement of PRFR-type roads and include the funding needed in its Priority Infrastructure Plan (PIP).

In the last sub-section, a policy to manage HPV and HML access between the nearest state PRFR and major freight generators or industrial areas was suggested. Any such local roads should be designated by the local government as an appropriate level of PRFR, within the context of a state package as outlined.

The QTLC is well placed to work with the LGAQ, TMR and DSDIP to provide advice and support to facilitate local governments progressing this approach.

With appropriate focus from state and local governments, there is strong potential for 'first and last mile' issues to be substantially addressed through better planning.

RECOMMENDATION

28. Local governments apply state guidelines for improved industrial and PRFR planning once developed in their planning schemes and PIPs, including designating relevant local roads at an appropriate PRFR hierarchy level.

The Transport Infrastructure Development Scheme (TIDS) has traditionally provided funding to local governments for transport-related initiatives which support state government objectives.

The policy settings and funding parameters for TIDS are currently being reviewed with a desire to:

1. establish a funding model that provides greater flexibility and autonomy, allowing Regional Road Groups (RRGs) to determine their transport infrastructure needs and prioritise accordingly
2. consolidate the various sub categories of TIDS into one stream of funding.

While freight considerations are typically incorporated at a project level by most of Queensland's RRGs, only a few have sought to develop a freight strategy at a regional level.

In light of the TIDS review and further reforms being progressed at a national level (i.e. NTC and HVCI) to support increased productivity, a timely opportunity exists to promote the identification of PRFR through the RRG framework based on the outputs of individual local government planning schemes.

RECOMMENDATION

29. The QTLC, LGAQ and TMR work together to identify where the identification of PRFRs can be supported through RRG planning processes.

➤ 6.3.4 Local roads and HPV route assessment and access

As owner of more than 80% of the road network in Queensland, local government plays a critical role in the efficiency of the road freight task. When making heavy vehicle access decisions, councils must assess a number of factors including the safety of other road users, the condition of the infrastructure and public amenity.

Decisions to approve access applications are dependant largely upon the outcome of an assessment of the proposed route. Councils' ability to complete route assessments is constrained by their resource capacity and assessment capabilities. Some local governments do not employ full time engineers and, where a full time engineer is employed, they are often responsible for managing all asset classes including sewerage and water, not just roads.

The PBS Route Assessment Tool (RAT) is an expert system developed by ARRB in collaboration with the Municipal Association of Victoria (MAV), for use by local government practitioners to assist in classifying heavy vehicle routes according to Performance Based standards (PBS) guidelines.

The tool allows users to enter data on a specific route of interest, and assess the infrastructure's ability to facilitate the safe and efficient operation of PBS heavy vehicles.

The tool provides a detailed PBS classification for each logical segment of the route. By conducting the assessment in this manner, local governments can clearly identify the most restrictive elements of the route according to the guidelines.

To address 'first and last mile' issues associated with complex and time consuming route assessments, the PBS RAT should be modified for the Queensland regulatory context and provided to councils to support them to make timely HPV access decision making.

It is critical that modification and implementation of the PBS RAT, or any similar tool, be cognisant of the requirements for access decision making to be administered by the NHVR from the middle of 2013. Consequently, a collaborative approach between local government, TMR and the NHVR is required.

RECOMMENDATION

30. TMR, NHVR and the LGAQ collaborate to modify and implement the PBS Route Assessment Tool (or similar) to support and improve HPV access decision making on locally controlled roads.

➤ 6.3.5 Heavy vehicle after-hours servicing access

For more than three decades, all heavy vehicles with a GVM >4.5 tonnes have been required by national legislation to emit a loud, piercing beeping noise when reversing. This was to ensure that any workers out of sight of the driver reversing the vehicle were alerted so they could avoid injury or death.

As a result, many local governments have limited access to business hours by these vehicles to, primarily, retail centres located in residential areas. This is understandable, but the cost of servicing freight deliveries during business hours only is significant. This drives up supply chain costs and the costs of consumer goods.

Technology advances in the intervening decades has led to reversing radar or other systems being able to replace the time-dated reversing alarm.

The QTLC will engage with retailing and industry stakeholders and the LGAQ to have the nationally legislated heavy vehicle reversing alarm framework terminated and its functional need met by a safe, quiet modern technology solution on all new heavy vehicles.



7.0 REGIONAL SUPPLY CHAINS

7.1 Background, policy and challenges

Queensland's key supply chain corridors are considered in this chapter, but not necessarily in order of significance.

In each case, the key supply chains, their freight demand and corridors are described, their challenges identified and opportunities and priorities suggested.

During the last decade, much private and public sector investment has occurred in Queensland's freight transport system, benefitting the relevant supply chains. This is discussed for each corridor in turn. Even with the investment made, most regional corridors still have particular challenges.

Many non-infrastructure investment opportunities and priorities to strengthen Queensland's supply chains have been outlined in previous chapters. Others will be suggested in this chapter. If they are all implemented, infrastructure blockages and developing capacity constraints will still require investment. Priority investment is suggested in corridors where it will deliver supply chain efficiencies.

➤ 7.1.1 Economic and freight growth

The Queensland Government has announced a ‘four pillar’ policy to facilitate growth in the construction, agriculture, resources and tourism (the four pillars) industry sectors. Inspection of Figure 2.1 shows that these four sectors not only comprise 27.8% of Queensland’s economy, but also support much activity in other key sectors, including manufacturing, transport, postal, finance and insurance, which comprise another 22.9%.

In dollar terms, Queensland’s ‘four pillar’ sectors comprise \$78 billion of its economy and supply chains are a key part of this. State revenue directly from the mining sector in particular, and indirectly through all sectors, is significant and is highly likely to exceed any outgoings to support the ‘four pillars’, given the proportion of the state budget committed for health and education.

Chapter 2 demonstrated that road freight will increase by over 70% and rail freight over 100% in the next decade.

Efficient supply chains and their freight transport requirements are critical to reducing input costs and driving future investment and growth.

In Chapter 3, it was stated that information on supply chains would be drawn from the CTEE Queensland Transport Facts, TMR’s 2010 Road Freight Map, the Port of Brisbane QTLC draft IMEX study and Transport for New South Wales’s draft Freight and Ports Strategy. Except where referenced, this chapter uses data from these sources.

➤ 7.1.2 TMR Freight Policy and corridor investment

✦ TMR road network planning and programming

In its State-controlled Priority Road Network Investment Guidelines (RNIG) released in mid 2011, TMR has defined its Priority Road Network (PRN). The PRN comprises the ‘set of roads considered to be of key importance within the state-controlled road network. The PRN maps serve as strategic maps to guide development (i.e. funding investment for infrastructure upgrading) of subset networks such as freight and tourism’.

(Section 6.3 outlined suggestions to ensure consistency in PRFR planning.)

The RNIG are important because they determine which parts of the state-controlled road network are a priority for investment. They illustrate that TMR seeks to incorporate multiple drivers such as freight and tourism in formulating its road network investment program. They also give guidance to TMR’s regions about the planning and

design standards that investment planning should strive to achieve. This investment planning is subsequently refined, reconciled and incorporated into TMR’s three year Queensland Transport and Roads Investment Program (QTRIP).

It is not known whether the RNIG included consultation before being published.

TMR’s RNIG ‘set out a logical framework for determining road investment decisions (for the PRN) in an environment of increasing demand within restricted budgets. The guidelines provide a strategic, 20-year, view that sets out the TMR’s approach to upgrading the state-controlled network in Queensland. The PRN translates government and corporate objectives into a road investment strategy that provides guidance to TMR on what, how and when to upgrade.’

The RNIG also contain road planning and design standards, including ‘a simplified statement contained in the tables at Appendix 4, to provide indicative vision standards drawn from a range of official planning and design manuals’. The RNIG states that ‘TMR will apply these standards in a generic manner across Queensland’s road network to ensure a consistent approach to upgrading the road network. They are not designed to be prescriptive at the route, link or project level, although variation from them will require adequate justification’.

➤ Government’s critical corridors

The Queensland Government’s pre-election policy document, Building Queensland’s Future, outlines a high-level, infrastructure-oriented process to facilitate the government’s ‘four pillar’ policy to drive economic growth and deliver services. It has emphases on better coordination and planning, funding models and stronger accountability. It also states fast tracking of six Critical Priority Projects, being:

- Bruce Highway – Brisbane to Cairns
- Brisbane Inner City Rail
- Toowoomba Range Western Freight Corridor
- Eastern Busway to Capalaba
- Roads to Resources in regional Queensland
- Upgrades for dangerous level rail crossings.

The Toowoomba Range Western Freight Corridor, the Roads to Resources and the Bruce Highway – Brisbane to Cairns are directly related to freight. The Brisbane Inner City Rail is oriented towards passenger services but may benefit freight trains by providing increased capacity. The Eastern Busway and level crossing upgrades are likely to have peripheral or local impacts on freight movement.

These six Critical Priority Projects will not be delivered without substantial financial support from the federal government.

At the beginning of Chapter 6, for example, it was noted that the Queensland Government's Bruce Highway Action Plan (BHAP) is seeking \$10.5 billion over seven years for only High Priority 1 and High Priority 2 infrastructure improvements. The QTRIP outlined funding for enhancement of the NLTN in 2012/13 of \$1,349.9 million, excluding maintenance and reconstruction funding. Thus, the funding sought for just one of the Building Queensland Future Critical Priority Projects would more than consume seven years of NLTN investment at the QTRIPS 2012/2013 rate, leaving no funding for Queensland's six regional NLTN highways and numerous urban highways.

For this reason, Queensland, in its BHAP, has committed \$1 billion in funding and requested the Australian Government commit a further \$5 billion. The Australian Government has stated its objectives and linkage of funding to achieving these objectives in reports including the COAG National Ports Strategy, the National Land Freight Strategy Update and the Reform and Investment Framework. A key objective is the efficiency of supply chains and how these can be improved. However, this supply chain efficiency perspective was not made as explicit in the BHAP as it was in the Warrego Highway Upgrade Strategy (discussed later in this document), where supply chain efficiency is both the driving goal and objective.

The QTRIP outlined funding for the remaining state-controlled roads of \$1,293.1 million. It also contained funding of \$863.1 million for passenger rail and Translink projects.

The QTRIP rate of funding for infrastructure maintenance and enhancement is unlikely to be sufficient to cater for the forecast growth in freight (and passenger) traffic. This possibility may have influenced the Queensland Government's six Critical Priority Projects initiative. This initiative is yet to attract renewed federal funding.

➔ 7.1.3 Non-infrastructure approaches

Being cognisant of the Queensland Government's current funding constraints, this report considers other approaches to improve supply chain efficiency for road freight, as well as infrastructure enhancements. The size of the 'four pillars' sectors – \$78 billion – is already a key focus of government attention. It is important to recognise the contribution of supply chains to these four sectors, and all industrial sectors of Queensland's \$280 billion economy.

Two new non-infrastructure and management approaches are suggested.

Firstly, **non-infrastructure opportunities** as well as infrastructure opportunities are needed. Making more efficient use of the available capacity is again a key principle applied in this chapter.

Secondly, **integrating supply chain and freight initiatives** by the private and public sectors will increase benefits for all. Such an approach would involve the private sector, local governments and state agencies other than TMR, although the latter is a key agency. Examples of other state agencies are the Department of State Development, Infrastructure and Planning (DSDIP) being accountable for developing Queensland's ports strategy, the Department of Agriculture and Fisheries (DAFF) for agriculture, the Department of Natural Resources and Mines (DNRM) for mines, and respective local governments for local roads and land use planning/development assessment.

The state government may consider nominating a state agency and executive to be accountable for improving the integration of supply chains and freight initiatives.

In New South Wales, the new government is delivering a renewed focus on freight with the appointment of a Deputy Director General for freight and creation of a Bureau of Freight Statistics. Victoria University has an Institute of Supply Chains and Logistics. Queensland does not have an equivalent freight and supply chain perspective, focus or high-level accountability by government.

The Queensland Government may consider providing an improved focus to its agencies by nominating a lead agency with a Deputy Director General accountable for delivering a renewed focus on supply chains and freight as a key support to its ‘four pillars’ strategy.

Any increased state resourcing for an accountable executive for supply chain efficiency would likely be quickly offset by efficiency savings through integrated non-infrastructure initiatives, better use of existing infrastructure and other supply chain efficiencies delivered by them.

RECOMMENDATION

31. The Queensland Government designate a lead agency, and resource a Deputy Director General position to be accountable for integrating supply chain and freight efficiency, as is the case in New South Wales.

➔ 7.1.4 Corridor data sources and challenges

As stated in sub-section 3.3.1, the CTEE Queensland Transport Facts, TMR 2010 Road Freight Map, Port of Brisbane QTLIC IMEX Study draft and sub-section 5.1.4 outline of rail freight demand inform this chapter. While significantly less comprehensive than the Transport for New South Wales strategic freight model outputs, they have to be sufficient to illustrate current issues. At least for the road mode, the data also allows a consistent comparison of the freight transported to service corridor level supply chains.

➔ 7.1.5 Rail line low standard descriptor

In the following sections comment is made about selected rail lines being of low standard. The intent of the ‘low standard’ descriptor is it means the line is of a standard that does not provide either sufficient capacity or the capability for modern rollingstock/locomotive or train-sets to compete for freight cargo, without investment to upgrade the standard of the rail line.

Arguably such rail infrastructure could be described as being preserved at a level that is consistent with its current use and consequently being fit for purpose.

This does not acknowledge that some rail and branch lines can no longer compete with the road mode for particular commodities, as they did decades ago.

Where rail infrastructure may have been suitable in the past for a freight task, but has not evolved to meet the growing needs of industry (for example by faster transit times, increased reliability, heavier and higher containers and the like), this report considers it to be of low standard.

Throughout the report we describe other rail lines which have been maintained and developed and continue to attract freight and revenue traffic.

7.2 South East Queensland (SEQ)

➔ 7.2.1 Supply chains description and freight demand

South East Queensland, and Brisbane especially, contain many of Queensland’s most important supply chains and facilities. Noteworthy are the Brisbane Multi-modal Terminal (BMT) at the Port of Brisbane, the Port of Brisbane for import and export chains, the Brisbane Multi-User Terminal (BMUT) at Acacia Ridge for intermodal freight, TradeCoast for petroleum products and the Rocklea Markets for domestic vegetable and fruit supply chains. However, there are many other significant supply chain industries and freight generators.

All supply chains require reliable efficient transport infrastructure and regulations.

As Brisbane continues to grow, the capacity of its landside transport networks is being stretched and congestion is becoming an increasing concern – and not only during peak periods.

The key issues for the South East Queensland supply chains, beyond those addressed in previous chapters, are congestion and capacity for the landside modes affecting freight reliability.

✦ Rail freight

There is no intra-regional rail freight in South East Queensland. As described in section 5.1.4, four regional priority freight rail lines service the region, including:

- North Coast Line, carrying approximately 3 Mpa of general freight, consumer goods and industrial freight
- West Moreton, Western, and South Western systems, carrying approximately 10 Mtpa of, primarily, coal, but also grain, livestock and industrial freight
- Port of Brisbane Line, carrying approximately 10 Mtpa of coal, grain and meat
- Interstate Rail Line, carrying up to 2.5 Mtpa.

Having rail carry more freight has been an aspiration of governments and the community for decades. This aspiration is stated in numerous strategies and plans including the Integrated Freight Strategy for Queensland (IFSQ) and Connecting SEQ 2031.

Since completion of rail electrification nearly two decades ago, there has been significant investment in the rail (and busway) passenger network capacity, but comparatively limited public sector investment in South East Queensland's rail capacity for freight purposes. The key government freight-orientated rail investments are the rail overpass and third line to the Port of Brisbane, and extension of the BMUT over Beaudesert Road at Acacia Ridge.

The BMUT at Acacia Ridge is the key interstate/intrastate freight terminal. It may be able to be improved at relatively low cost to increase its capacity, efficiency and access. The Toll Group is also further developing its Moolabin Intermodal Facility.

Chapter 5 suggested policy and planning initiatives to increase the efficiency of rail supply chains. If implemented, the Rail Network Operational (Efficiency) Policy could potentially facilitate increased freight train usage at nights or weekends.

Investigation of the commercial merits of a northern intermodal rail facility should be a priority. However, it should be contrasted against an efficiently developed intra and interstate Brisbane Freight Terminal at Acacia Ridge and Toll's Intermodal Terminal at Moolabin – when both are being served by freight trains operating under an efficient rail network operating policy. Such an investigation may support a northside intermodal terminal proposal, or lead government to defer or cease future planning for the concept. Either outcome would be valuable for planning purposes.

The lessons learned from a rigorous study could be applied to other planned intermodal terminals at Bromelton, Ebenezer and Charlton Wellcamp. It would be worthwhile for this to be done as part two of an intermodal investigation in South East Queensland and related regions. Intermodal terminals with potential should be protected, including by planning scheme powers. Those found to be without sufficient potential should be abandoned to limit land blight, as discussed in section 5.2.

RECOMMENDATION

32. TMR conduct a supply-chain-based, commercial investigation of the potential for, and possible location of, a north Brisbane intermodal terminal as outlined here and in section 5.2.

The Port of Brisbane has aspirations to increase the proportion of its landside freight task being performed by rail. Rail is innately suited to carrying non-seasonal and bulk freight. Minerals, coal and some other commodities meet this criterion, and the Port of Brisbane is ideally situated to serve Surat Basin coal exports, from a transport-only perspective.

As at 13 May 2013, the Port of Brisbane in partnership with the QTLC is finalising an IMEX (import/export) Logistics Chain Study final draft report. This is discussed in more detail below.

TMR has also initiated an SEQ (Rail) Capacity Project. Longer and more frequent rail passing loops are expected to be a lower-cost means of delivering rail freight train efficiencies, and these should be considered.

However, the existing QTRIP funding for rail projects is oriented toward passenger improvements.

✦ Road freight

All intra-regional freight transport is performed by road vehicles. The freight tonnage carried on some roads in Brisbane, as the legend of Figure 7.1 shows, can be nearly as much as Queensland's highest tonnage Goonyella Rail Line, which carries 99 Mtpa of coal⁴².

The importance of the road freight mode for intra-regional freight is one of the reasons why there has been continuing government investment in the road network over the last decade – in contrast to the rail freight network – much of which has benefited freight transport.

⁴² While road tonnages are expressed in GVM, the tonnage on the second highest Blackwater System is 58.3 Mtpa.

The significant investment in radial roads approaching or near the CBD has been predominately in private/public tolled tunnels such as Clem7 and Airport Link. These do not convey freight benefits⁴³ commensurate with their passenger benefits.

However, billions of dollars has been invested in TMR's urban circumferential motorways, including the Gateway Bridge duplication, the motorway through the former airport, the Gateway South upgrading and Port Motorway construction. All deliver significant freight benefits.

Similarly, federal and state investment in the National Land Transport Network (NLTN) intra-regional/interstate road network has secured significant freight travel time and reliability savings. Examples include the three-laning of the Bruce Highway to Caboolture, the Ipswich Motorway reconstruction between Darra and Dinmore, and many smaller worthwhile projects.

Figure 7.1 2010 ROAD FREIGHT MAP SEQ STATE-CONTROLLED ROADS



⁴³ Tunnels do not convey the same road freight benefits as they potentially can for passenger vehicles, due to height, width and safety aspects limiting RAV access.

There remain significant peak direction and peak period road freight delays on other elements of the NLTN roads, including the Pacific Motorway, Ipswich Motorway (Darra to Rocklea), Gateway North, and on the three-laned section of the Bruce Highway. There is also extensive congestion on many other state-controlled roads and some local arterial roads. In part, congestion is caused by the motorways being used for very local travel instead of the supplementary at-grade arterial road network, which generally has not been the focus of development by either the state or local governments to meet the demand for travel.

The net capacity of the road network available varies enormously throughout the day. At night on most elements of the road network, most of the road capacity is available. Potentially more use could be made of the network at times when the network is less congested, but demand for travel takes into account business hours at the dispatching and receiving termini.

★ Port of Brisbane

The Port of Brisbane stands alone as being not only a major freight generator but also Queensland's premier export/import port.

The IMEX Logistics Chain Study monitored freight movements in a two-week survey in September 2012. Survey responses were expanded to take into account non-responses and seasonal fluctuations to produce an estimate of annual freight movements through the Port of Brisbane.

The draft results can illustrate freight demand for this project while retaining a degree of confidentiality by displaying three figures from the final draft IMEX study report.

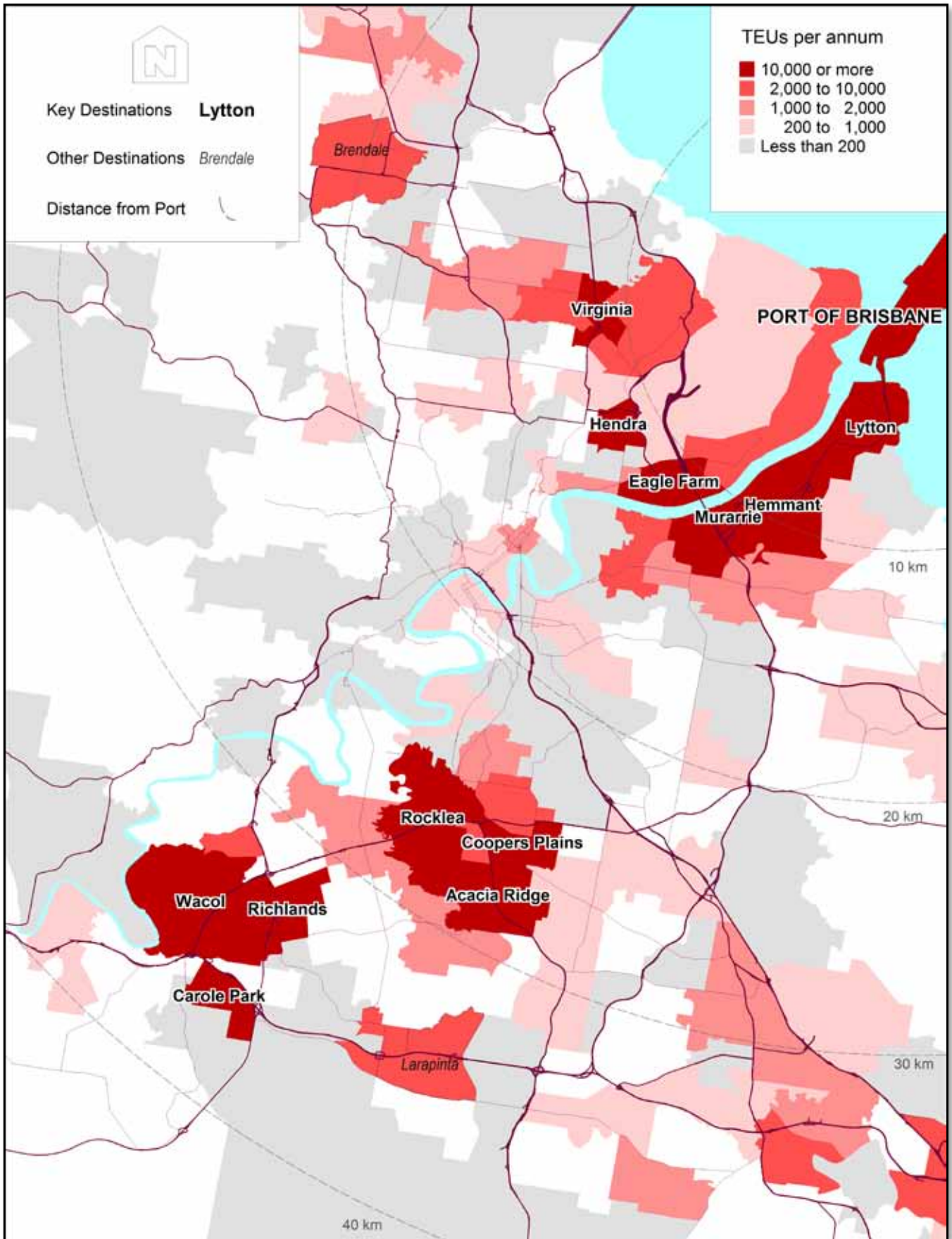
While not presented, export container movements have a generally similar geographic orientation to import containers from the Port of Brisbane; that is, the highest concentration of export containers arises within Brisbane. As expected, the export container origins are more aligned with the exporting agriculture and other commodity regions than are import container destinations.

Figure 7.2 shows the destinations of the 66% of all Port of Brisbane import containers bound for Brisbane City. The destinations are highly focussed on industrial areas.

In fact, only 12 Brisbane suburbs account for over 50% of the total import movements and each of these have more than 10,000 TEU movements per annum. Six of these suburbs are within 15 km 'crow flies' distance from the Port of Brisbane and all are within 40 km 'crow flies' distance. These six closest suburbs are destinations for 31% of all containerised imports. The three closest suburbs comprise nearly 22% of imports.



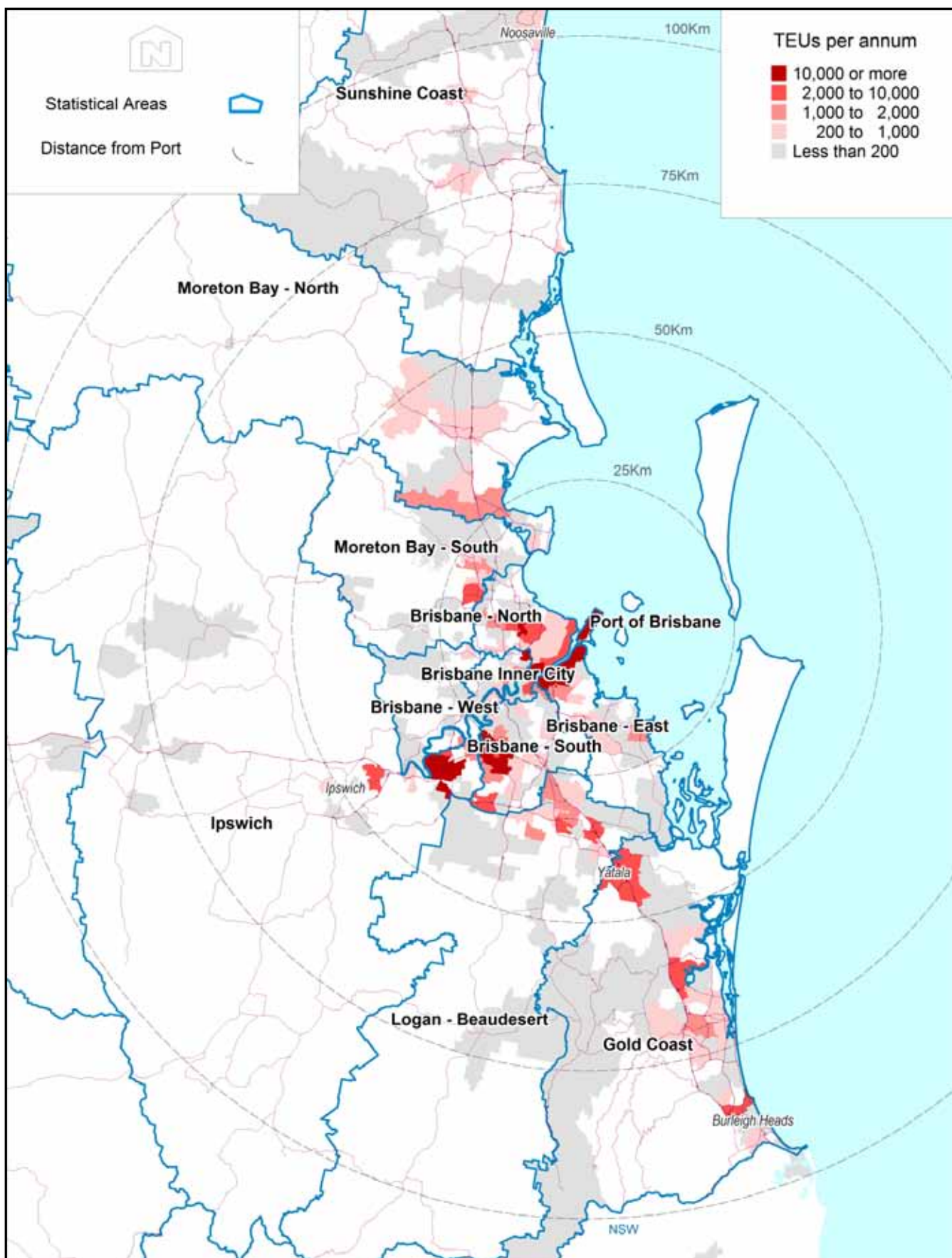
Figure 7.2: ESTIMATED BRISBANE LOCATIONS OF IMPORTED FULL TEU'S



Source: POB/QTLIC IMEX Study (draft) 2013

Figure 7.3 illustrates 93% of import containers are destined for locations in Brisbane and adjacent statistical regions. Only 7% of import containers are distributed across regional Queensland and interstate.

Figure 7.3: ESTIMATED LOCATIONS OF IMPORTED FULL TEU'S IN AND NEAR SEQ



Source: POB/QLC IMEX Study (draft) 2013

The draft IMEX report demonstrates that Port of Brisbane import and (to a reduced degree) export containers are highly focussed on the port and industrial areas. The closer an industrial area is to the Port of Brisbane, the more likely it is to be the destination of import containers and origin of export containers. This analysis has key implications for the planning of both landside modal networks to service the predicted growth in Port of Brisbane freight growth.

The location of container freight stations where a third party can pack or unpack containers for import or export would lead to the high focus on Brisbane's near port suburbs. This is especially the case for imported containers.

The draft report's summary observations for imports are that:

- import containers are very focussed on the Port of Brisbane, with 12 Brisbane suburbs accounting for over 50% of containers, and the closest three suburbs accounting for 25%
- 98% of imported steel is delivered to Brisbane locations with 50% of that delivered to Acacia Ridge
- 72% of imported motor vehicles are delivered to Brisbane locations
- 93% of all import containers are destined for Brisbane's contiguous cities; the remainder 7% service regional Queensland and interstate
- more than 61% of imported project cargo is distributed with 60km of the port, with the remainder across regional Queensland.

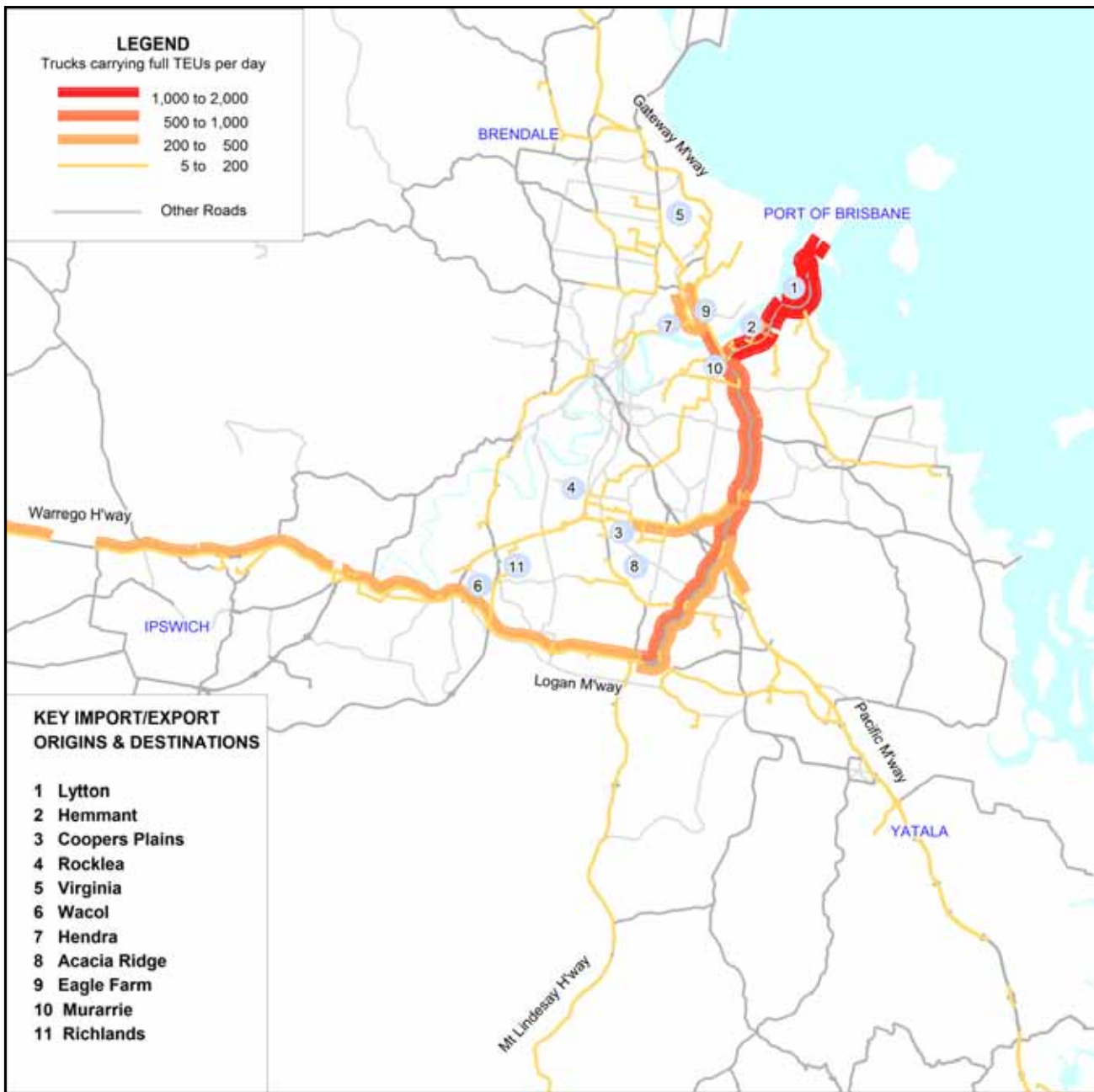
Given the number of imported containers travelling relative short distances, it is no surprise to find that road is the dominate mode. All non-containerised imports are transported by road freight.

Export containers are less focused than import containers as many service regional agricultural exports. Nearly 40% of export containers originated outside South East Queensland. Even so, the mode split to rail for export containers was found to be marginally higher than import containers at 5.1%.

In terms of bulk exports, grain has some market share carried by rail, while the rail mode dominates bulk coal transport.

Figure 7.5 shows where heavy vehicles container routes to and from the Port of Brisbane.

Figure 7.5: 2012 CONTAINER VEHICLE ROUTES TO/FROM THE PORT OF BRISBANE



Source: POB/QTLC IMEX Study (draft) 2013

↪ 7.2.2 Challenges

South East Queensland's road and rail freight networks are also part of the region's passenger transport task. Both the freight and passenger tasks are forecast to grow.

Within South East Queensland, all road elements of the National Land Transport Network (NLTN) carry more than 25 Mtpa of freight⁴⁴ and up to 96 Mtpa as indicated in Figure 7.1. This indicates that freight flows on roads within metropolitan Brisbane and connecting Brisbane to the northern Gold Coast are at least five times greater than any rural road freight flows outside South East Queensland.

Importantly, a minor proportion of these South East Queensland road freight flows provide regional Queensland and northern New South Wales landside services with the Port of Brisbane as indicated in Figure 7.5.

Road is the dominant mode for import and export containers and for imported project cargo, motor vehicles, steel and bulk grain exports.

The rail line to the Port of Brisbane and the South West Moreton line both carry in the order of 10 Mtpa (mostly bulk coal exports). In Chapter 5, a new policy regime to better balance passenger and freight flows was suggested, which would not impact on weekday peak passenger flows.

The constrained investment climate for high-cost infrastructure enhancements has also been described, which limits further high-cost infrastructure initiatives in the short term.

The next section outlines some opportunities and priorities to resolve South East Queensland's capacity and congestions issues.

↪ 7.2.3 Opportunities and priorities

There is potential for low-cost opportunities. Individually these generally provide local-level benefits, with broader cumulative benefits over time.

★ Low-cost network enhancements

A number of high-cost infrastructure upgrading of motorways, bridges and range crossings have recently been completed. As shown in Figures 7.2 to 7.3, much of Port of Brisbane traffic is destined to a few industrial areas that are concentrated in an arc 10–15 kilometres from the north-east to the south-west of Brisbane.

There is poor road connectivity between many of these industrial areas, which generate high volumes of business-to-business traffic. Some of this issue was created through severance by motorway construction many years ago. The severance of the Pinkenbah industrial estate by the former Gateway Motorway, now Southern Cross Way, is an example from the '80s. This leads to motorways or a nearby arterial road, being used for short distance local trips by both heavy and light vehicles, for example:

- The Boundary Road alignment (but no road) connects Carole Park and Wacol with the Darra industrial area, so the Ipswich Motorway or Progress/Archerfield Roads have to be used.
- The Ipswich Motorway does not have service roads to its north or south between Darra/Inala to the west and Archerfield north or south to the east. Consequently, vehicles have to access the Ipswich Motorway for the Oxley Creek crossing, causing flow breakdown in the east direction in the am and west in the afternoon.
- Vehicles travelling between Lytton/Hemmant and Port West have to use the Port Drive, whereas there may be potential to extend Lytton Road to connect the two areas.

In the past, connecting roads have been provided even where the roads were of low standards, in recognition of the value of freight connectivity. Marshall Road (north) at Archerfield and Curzon Street, Tennyson, are examples of low standard roads susceptible to flooding but connecting industrial areas. At most times, they provide efficient connections and keep heavy vehicle traffic off the major road elements. They are designed so that they will close during a flood, but flood events generally do not cause infrastructure damage.

Such roads do not meet current design standards of state or local governments.

If the road transport industry would accept and advocate a service road of a low standard crossing Oxley Creek north and south of the Ipswich Motorway, it may be able to be provided well in advance of a motorway upgrade. Outside wet weather periods, such a service road would provide substantial benefits. A key issue is managing their safe closure during wet weather periods.

In other situations, with the Pinkenbah Industrial Estate being an example, the role and function of the roads in the area has changed which may create opportunities to provide better local road connections.

An investigation to consider the potential for better industrial road connectivity including though such low-cost fit-for-purpose roads to better connect the major industrial areas of Brisbane may be timely. The support of the Brisbane City Council and TMR for the concept would be advantageous, and for its planning and delivery.

RECOMMENDATION

33. TMR and/or Brisbane City Council investigate the potential for better connectivity through low-cost, fit-for-purpose roads to increase the resilience of Brisbane's road freight network, resolve potential safety risks, identify where they could be supplied, and seek public and private sector funding for their delivery.

★ Road reliability improvements

Within urban areas, road transport operators suffer the delays caused by daily peak period congestion and also delays from non-recurrent congestion caused by traffic incidents or, occasionally, flooding. Highways and motorways are the backbone of the road transport system, but their posted high-speed zonings attract passenger vehicles away from the local road system. Passenger vehicles are more suited to surface roads than heavy vehicles due to their higher acceleration and braking abilities.

Speed breakdown on high-speed roads can occur with great rapidity when traffic volumes become too high. Most regular motorists and drivers are aware of the time and locations where speed breakdown may occur.

Road transport operators may accept a lowering by 10 km/h of the open speed limit from 100km/h in urban areas and 110 km/h on some of the major intra-regional roads, if this reduced the crash risk and reliability was improved.

For a 25 km urban trip, a reduction by 10 km/h would increase the travel time by 1.7 minutes (for an original 15 minute trip). For a 50 km rural trip, it would increase from 27.3 minutes to 30 minutes.

It is not known whether the potential benefits of a possible increase in reliability – including any deferral of flow breakdown, a slight saving in fuel consumption, a reduction in crashes, or slower speed-zoned motorways proving less attractive for some short distance passenger travel – outweighs the insignificant increase in travel time.

A lower speed limit is consistent with the road transport industry's goal of zero road fatalities. There may also be public perception benefits for the road transport industry if it advocated a general speed zone reduction of 10 km/h on urban motorways and major highways in South East Queensland.

The cost of building motorways to accommodate current high design speeds is proving to be unsustainable. The significant savings in construction costs from building motorways for lower speed limits could enable more motorways to be built sooner.

By way of comparison, the urban speed limit in Queensland was 60 km/h until the state government agreed to a three-year Brisbane City Council trial of a generic local road 50 km/h limit in South East Queensland. Following evaluation, it was introduced throughout Queensland and nationally.

The QTLC will canvas its stakeholders about lowering the South East Queensland urban motorway speed limit by 10 km/h and support an open speed limit of 100 km/h. If positive, the Queensland Government could fully investigate the costs and benefits of lowering the speed limit as outlined.

✦ Rail reliability improvements

The Cross River Rail project will require billions of dollars and as much as half a decade for its design and construction.

A relatively low-cost approach to improving the South East Queensland rail network capacity, may be to provide a new automatic train signalling system to allow reduced train headways, and therefore more trains to be accommodated safely on the existing rail network. The cost of installing such a system and retro-fitting the 200 CityTrains is likely to be quite significant. However, if such a system could accommodate an increased number of freight trains at reasonable cost, it should be considered.

RECOMMENDATION

34. TMR investigate the potential for an automatic train signalling system to provide a value-adding approach to more efficient use of Brisbane's rail network capacity.

7.3 Connecting North Queensland

➔ 7.3.1 Supply chains description and freight demand

This coastal/inland corridor provides capacity for freight movements between Brisbane and Cairns, and all the cities in between, as well as providing the spine for many of the supply chains that originate in north-west and central Queensland.

It features the North Coast (rail) Line and a largely parallel Bruce Highway. The North Coast Line and the Bruce Highway are elements of the National Land Transport Network (NLTN).

Limited coastal shipping distributes petroleum products from Brisbane and other products to Brisbane and Townsville from Gladstone.

The two inland road routes are the shorter Brisbane, Miles, Rockhampton corridor and the longer Brisbane, Roma, Emerald, Charters Towers, Townsville road corridor.

The corridor is also serviced by a dispersed network of local government roads. Away from urban areas, outside towns and communities and further from the coast, these are invariably unsealed.



★ Freight demand

The freight demand generated by the many supply chains is not uniform on the road or rail links servicing the Brisbane-Cairns corridor. This is due to the nature of the freight commodities, and where they are produced, transformed and consumed or exported. An example in this corridor is sugar, which is grown, transported to a mill for refining, then transported for manufacturing or consumed domestically, or exported.

While the Queensland Transport Facts forecasts significant growth in both rail and road freight, these are not regionalised as discussed in section 3.3. Nevertheless, it is clear that much of the forecast increase in rail traffic across Queensland will be coal freight, with the National Transport for New South Wales draft Freight and Ports Strategy (NFPS) showing such a forecast as well.

★ A summary of the existing demand follows.

- **Rail freight demand⁴⁵ on the North Coast Line:** This varies from approximately 3 Mtpa between Brisbane and Gladstone, but rises by 11.3 Mtpa just south of Gladstone, where the Moura system connects. Between Gladstone and Rockhampton, the Blackwater system uses the North Coast Line for 58.3 Mtpa adding to a possible 5-10 Mtpa of other non-coal traffic as far as Townsville, with a small proportion of rail freight as far as Cairns. The non-coal rail traffic comprises minerals, household and personal consumer goods, agricultural commodities, mining and agriculture inputs and fuel.
- **Coastal shipping freight demand:** Coastal shipping⁴⁶ plays an important role in the distribution of petroleum products in the Brisbane-North Queensland corridor, with 1.225 Mtpa being transported from Brisbane to Gladstone, Mackay, Cairns and Townsville. Of the 1.176 Mtpa of other products transported by coastal shipping, nearly 0.475 Mtpa is cement clinker carried from Gladstone to Brisbane and 0.46 Mtpa is cement from Gladstone for unloading in Townsville. Other cargo carried by coastal shipping in this corridor comprises only 0.25 Mtpa.
- **Road freight demand:** TMR's 2010 Road Freight Map forms Figure 7.6. It shows that from Bundaberg through to Bowen, the Bruce Highway carries between 5 and 10 Mtpa of road freight, greater tonnage to the south and in proximity to regional cities, and generally less than 5 Mtpa between Townsville and Cairns. As well, there are two inland road corridors:
 - Brisbane, Miles, Rockhampton, which carries less than 5 Mtpa
 - Brisbane, Roma, Emerald, Charters Towers, Townsville, which carries less than 5 Mtpa. Industry considers this more extensive route is the Inland Freight Corridor (IFC).

45 Source for rail coal tonnages is the Aurizon website, which also shows that the Newlands system carries 17.5 Mtpa for a short distance on the North Coast Line between south of Bowen and near Abbot Point port.

46 Source: 2012 Queensland Transport Facts, CTEE for 2009 – 10 financial year.

➔ 7.3.2 Challenges

★ Rail

The forecast increase in rail freight is oriented towards the bulk freight market, predominately coal. Freight demand on the North Coast Line is more broadly based. The rail mode is in direct competition with the road mode, which has higher, but still insufficient, levels of investment, and increasingly is able to be accessed by more efficient high productivity vehicles (HPVs). Over time, the differential levels of modal investment and the power of modern articulated vehicles which enable higher and safer speeds have ensured that comparative travel time for the rail and road modes has moved in favour of road.

The operation, maintenance and enhancement of the North Coast Line has many challenges including:

- lack of freight train access through Brisbane (discussed in Chapter 5)
- rail impacts on provincial urban cities and towns
- chronic underinvestment, low speeds and poor reliability of freight trains, because of:
 - poor alignments susceptible to flooding and particularly through some cities such as Rockhampton
 - low axle loadings and limited number of passing loops with insufficient lengths
- objectives of the Transport Service Contract versus its impacts on commercial operations, including interaction with Traveltrains with legislated priorities
- interactions with coal trains on some sections and the North Coast Line having two different rail managers.

Even so, there are operational factors to be considered as well as infrastructure attributes. It may be that lack of reliability of on-time arrival is a crucial challenge in maintaining, and in the longer term increasing, rail freight modal share. Lack of reliability can be a combination of train operations and road as well as rail network issues. Late arrival of trucks for train loading due to urban congestion, terminal efficiency and rail capacity can all contribute to rail freight reliability concerns. Particular areas where improvement could be made would include:

- locomotive reliability
- on-time departure
- reducing operational delays en-route.

Strengthening Queensland's supply chains requires improvements in all aspects of the supply chain, and by all stakeholders, in partnership.

A particular challenge for the rail mode is the plan by rail companies to operate longer trains carrying more freight to reduce operating costs, and the track/alignment and terminal facilities investment required to service these potentially longer trains. The nature of the proposal is that the infrastructure upgrading must be completed before the longer trains can operate. It is not known whether there is a viable, staged proposal for introduction of longer trains that can be economically justified, and whether the necessary investment can be raised from governments and the private sector to facilitate it.

As with the road corridors, susceptibility to flooding and washouts can be an issue for the North Coast Line.

★ Coastal shipping

Coastal shipping plays an important role in the distribution of petroleum products in the Brisbane-North Queensland corridor, with 1.225 Mtpa tonnes being transported from Brisbane to Gladstone, Mackay, Cairns and Townsville. Of the 1.176 Mtpa of other products transported by coastal shipping, nearly 0.9 Mtpa loads at Gladstone for unloading in Townsville and Brisbane. Other coastal shipping in this corridor comprises only 0.2 Mtpa.

The potential of coastal shipping is constrained by the number of ports and their locations that can service bulk freight, mining inputs or possibly container trade required by certain supply chains.

Coastal shipping has potential for providing supply chain resilience. While not as susceptible to the outages and incidents of the landside modes, it does introduce extra handling and facility costs.

★ Road

Carrying the forecast increase in road freight on the existing road corridors will be challenging, especially on the Bruce Highway. It suffers many of the poor alignment, susceptibility to flooding and urban growth issues of the North Coast Line, but is also encroached upon by adjacent land use.

While continuing decreases in the cost of airfares has removed much of the long-distance business and destination travel passenger market, drive tourism remains substantial. Use of the Bruce Highway for intra-regional and local travel in proximity to cities is growing, as is intra-city light vehicle travel. This causes increasing congestion related delays.

The Bruce Highway Action Plan (BHAP) outlines the funding necessary to reconstruct the Bruce Highway for the highest priority road safety, flooding and capacity improvements to bring it 'out of the crisis'. As already discussed, providing the billions of funding required will be challenging for all governments.

Progress on upgrades of the two inland road corridors, Brisbane, Miles, Rockhampton, and Brisbane, Roma, Emerald, Charters Towers, Townsville, has been slow, reflecting investment priorities, but this may not reflect industry needs.

The Inland Freight Corridor (IFC) linking Roma in the south to Charters Towers in the north, is not, capable of accommodating Type 2 road trains and Level 4 PBS HPV's from Clermont to Roma nor is there sufficient, adequate parking bays and facilities along the corridor. One of the major benefits of this IFC would be facilitating the removal of significant truck traffic off the Bruce Highway. This strategic corridor joins both interstate and intrastate freight links from the north to the south and would also provide significant additional importance in providing a second range crossing and Toowoomba bypass.

A particular challenge is the increased number and size of over-size, over-mass (OSOM) movements along the Bruce Highway to Gladstone carrying mining plant, such as dump trucks, and mining consumables, including steel and tyres. These movements are critical to Queensland's mining sector, but have potential to impact on the movement and safety of other road freight and passenger travel due to their size and speed of travel.

The increasing number of OSOM movements requiring police escorts has already been discussed in sub-section 6.1.6.

East of the range, many local government roads can be affected by flooding. Most remote local government controlled roads are unsealed, and some are unformed. In wet weather, they can quickly become impassable and in dry weather badly corrugated.

➤ 7.3.3 Opportunities for the Brisbane to North Queensland Corridor

✦ Program initiatives

The Queensland Government is strongly focussed on its Critical Priority Projects initiative, with six projects covering freight and passenger, road and rail elements. The Bruce Highway is the first project listed. It is discussed here as a surrogate for other landside modal corridors which have similar issues.

Reliability of supply chains is a key aspect for business. The Bruce Highway experiences hundreds of incidents causing delays each year, not including regular congestion delays, typically caused by peak period passenger demands exceeding the road capacity.

Road transport operators are aware of the location and duration of congestion hot-spots, so they can take these into account in their planning. As outlined in section 7.2, as quickly as extra capacity is supplied, increased demand, especially by short trip commuters, causes flow breakdown in other growing urban areas.

Many of the road incidents relate to flooding, but most to traffic incidents.

The Bruce Highway is susceptible to flooding. Flash-flooding is less predictable but has a shorter duration and generally impacts smaller areas, so that alternate roads not impacted can be used. With modern systems, general flooding is becoming more predictable and has an increased warning period. Flooding impacts can be severe especially when flooding damages pavement and seals or causes washouts, but road (and rail) transport operators generally receive warnings. The TMR 13 19 40 site is increasingly relied on for real time road outage information.

The QTLC strongly supports TMR's real time road network information supply.

Many QTLC stakeholders are also involved in TMR's Disaster Planning and Management. Its aim is to stockpile essential goods so that communities have access to food, water and health products during and in the response phase of disasters, and to pre-supply essential products for key industry sectors in affected areas. The QTLC strongly supports this initiative. In a related policy process, TMR stockpiles road building supplies where roads are likely to be cut and damaged by monsoonal rains, and also develops 'hard standing' areas for road traffic likely to be affected.

Road transport operators are impacted far more by road closures due to traffic incidents, particularly fatalities, when the police have to collect sufficient evidence to establish causality, which takes time.

In the BHAP report, some of the High Priority 1 road safety improvements are maintenance activities. These maintenance activities comprise \$817 million of the total High Priority 1 road safety improvements of \$2.702 billion. While maintenance contributes to road safety, it is also a necessary activity if the function of the road is to be preserved, so there is scope for maintenance to have its own category. Of the \$1,885 million in road safety improvements, sealing of shoulders and shoulder widening comprise \$998 million, safety barriers \$200 million, wide centrelines and audible edge lines comprise \$188 million and overtaking lanes \$334 million. Flooding improvement projects totals \$856 million, of which two major projects comprise \$566 million. Capacity improvement projects total \$2442 million.

It is beyond the scope of this report to assess which of the BHAP's maintenance, road safety, flood mitigation and capacity enhancement projects would contribute most to improving the efficiency of the Brisbane-Cairns corridor supply chains.

TMR also must consider passenger as well as freight outcomes in the development of QTRIP.

The QTLC makes the following four observations:

- The road freight volumes underlying Figures 7.1 and 7.6 should be the basis for prioritising freight related infrastructure, especially when the information can be augmented by forecast corridor growth from a Queensland strategic freight model when developed. These show that freight volumes vary considerably along the corridor, and can be used for strategic prioritisation of project benefits/costs from a freight basis.
- As recognised in this report, transport investment dollars are constrained, therefore:
 - Projects able to achieve program outcomes on a supply chain corridor need to be compared with those on competing corridors, including competing modal corridors.
 - It is even more important that a risk-outcomes-based approach be applied. 'Gold-plating' of standards and infrastructure cannot be sustained, and weight should be given to the earlier discussions in this document about low-cost industrial and service roads, design speeds for motorways and highways, provision of urban arterial networks and identifying and preserving PRFRs.

- The Queensland Government may adopt a different stance for different modes regarding investment that benefits freight. (This is beyond the scope of this report, but is worth stating for government consideration.)
- In a scarce investment environment, the QTLC and its stakeholders will need to form a view on the nature of road, rail and coastal shipping projects within programs that are of most benefit from a supply chain and logistics perspective. From long experience the following is suggested for consideration:
 - Given maintenance is crucial for the preservation of the asset, it should be funded as a matter of course.
 - As discussed, the impacts of flooding are less frequent, and where they may last longer, can increasingly be foreseen and flood outage planning measures activated. In this corridor, the two inland routes may have the capacity to service much of the Rockhampton, Mackay and Townsville to Brisbane freight flows should the Bruce Highway be flooded or vice versa.
 - Not all capacity enhancements have the same area-wide, long-term benefits of others. Properly planned and preserved town and city bypasses can confer long-term benefits, provided that access from adjacent land use is prohibited and local trip-making is discouraged. (There are cases in Queensland where bypasses have become integrated into urban areas, so that further bypasses have been constructed or are being proposed.) The cost of multi-level, high-speed motorway interchanges are prohibitive.

In order to present a single, authoritative position to government, the QTLC will seek to develop a position on which infrastructure programs, maintenance, road safety, flooding and capacity, and non-infrastructure programs confer most benefits on supply chain efficiency in urban and rural areas, and which types of projects within each program produce most supply chain efficiencies.

★ High Productivity Vehicle Access Program

In order to allow QTLC stakeholders to better plan business locations logistics and supply chains for increased efficiency, it is important for TMR to develop a High Productivity Vehicle (HPV) Strategy and a 10-year investment plan to increase HPV access. As discussed above, this HPV Access Plan (HPVAP) should be prioritised for the Priority Road Freight Routes outlined in section 6.3.

It should also be prioritised according to known freight volumes now, but with future freight forecasts following development of a Queensland Strategic Freight Model.

The Priority Road Freight Routes, or in the interim all roads carrying more than 1 Mtpa, should be assessed for their capacity to accommodate the different categories of HPVs using PBS nomenclature, including where these change. Using the Inland Freight Corridor (IFC) linking Roma in the south to Charters Towers in the north as an example, the section between Charters Towers to Clermont is already capable of accommodating Type 2 road trains and Level 4 PBS high productivity vehicles.

Combining this information with current and future levels of freight demand using the proposed Queensland Strategic Freight Model (QSFM) would draw attention to where HPV blockages and where their resolution may give greatest benefits.

Desirably, the HPVAP would also address local government 'last mile' issues as discussed in section 6.4. In the interim, the QTLC and its stakeholders could work with TMR to transfer supply chain knowledge to assist TMR.

RECOMMENDATIONS

35. TMR give high priority to developing a Heavy Vehicle Access Strategy and Investment Plan for at least a 10-year horizon, using the latest road freight data to help prioritise works.

➔ 7.3.4 Priorities

★ Rail

A North Coast Line study has been proposed to assess how the challenges in the previous sub-section can be addressed and the line can be improved to attract further freight. This is a positive step forward, which the QTLC supports.

In the interim, measures should be taken to align maintenance by the two rail managers on the NCL through better coordination. To minimise the impact of maintenance, rather than track maintenance possessions being subject to cancellation, should be investigated whether freight trains may be able to be 'walked through' multi track maintenance closures.

As with the proposed intermodal study in South East Queensland, the North Coast Line study should be conducted and assessed not only from the current legislated passenger train priority, but from the proposed Rail Network Operational (Efficiency) Policy. It also needs to be sufficiently broad to seek to address and prioritise resolution of the challenges stated in the sub-section 7.2.

RECOMMENDATION

36. TMR incorporate the Rail Network Operational (Efficiency) Policy approach and matters raised during the QTLC NCL Rail Forum in its North Coast Line Study.

★ Road network

TMR's State-controlled Priority Road Network Investment Guidelines (the RNIG) set out the Priority Road Network (PRN). TMR's PRN is shown as Figure 7.7.

The RNIG gives some details in an appendix about the criteria for the tri-level priority road hierarchy, but it is less clear how TMR may have applied these to designate particular road sections. The same comments apply to the RNIG's single level freight route network.

The RNIG does not state whether its processes or determination benefitted from external consultation.

The Bruce Highway and the Brisbane, Miles, Rockhampton roads are listed as Priority 1 Roads, while much of the Brisbane, Roma, Emerald, Charters Towers, Townsville route is also a Priority 1 Road, and most sections between Roma, Emerald and Charters Towers are listed as Priority 2 Routes.

This distinction is important as it affects funding allocation priorities for infrastructure upgrades.

The Bruce Highway has a significantly higher freight movement function than either inland road as shown in Figure 7.6. In that figure, the two inland road routes are shown as carrying equivalent freight volumes.

However, Figure 7.8 shows all three roads are nominated as state-controlled road freight network roads. This type of road is a subset of the PRN and should receive ‘additional

considerations [apply] for special heavy vehicle usage of some freight routes such as B Triples, HML, HLP and MCV. Key freight routes will receive particular consideration for overtaking opportunities, bridge strength, bridge width, intersection geometry, heavy vehicle rest areas and stopping places’. Special consideration also applies to their road planning and design standards.

Figure 7.7: RNIG PRIORITY ROAD NETWORK

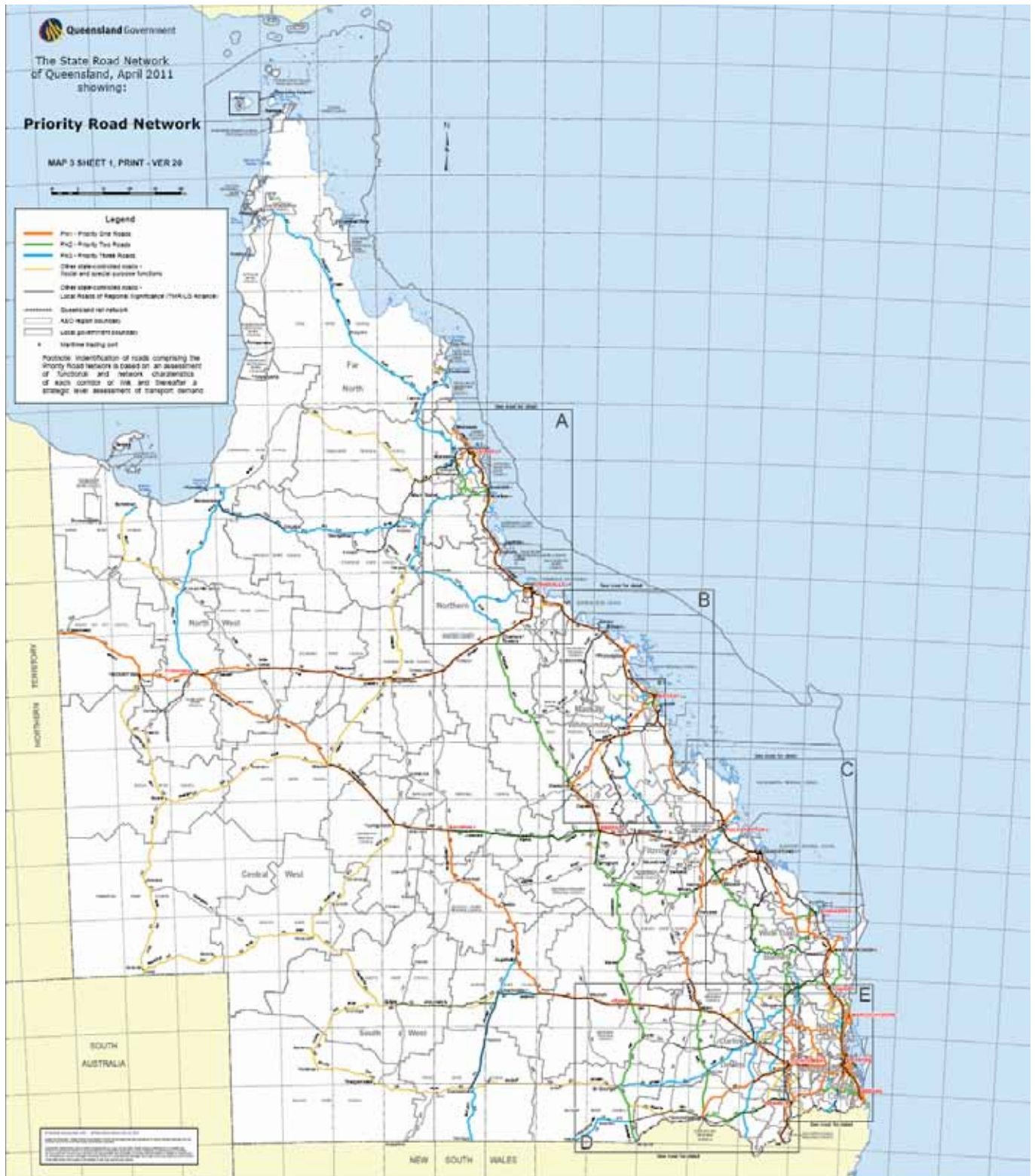
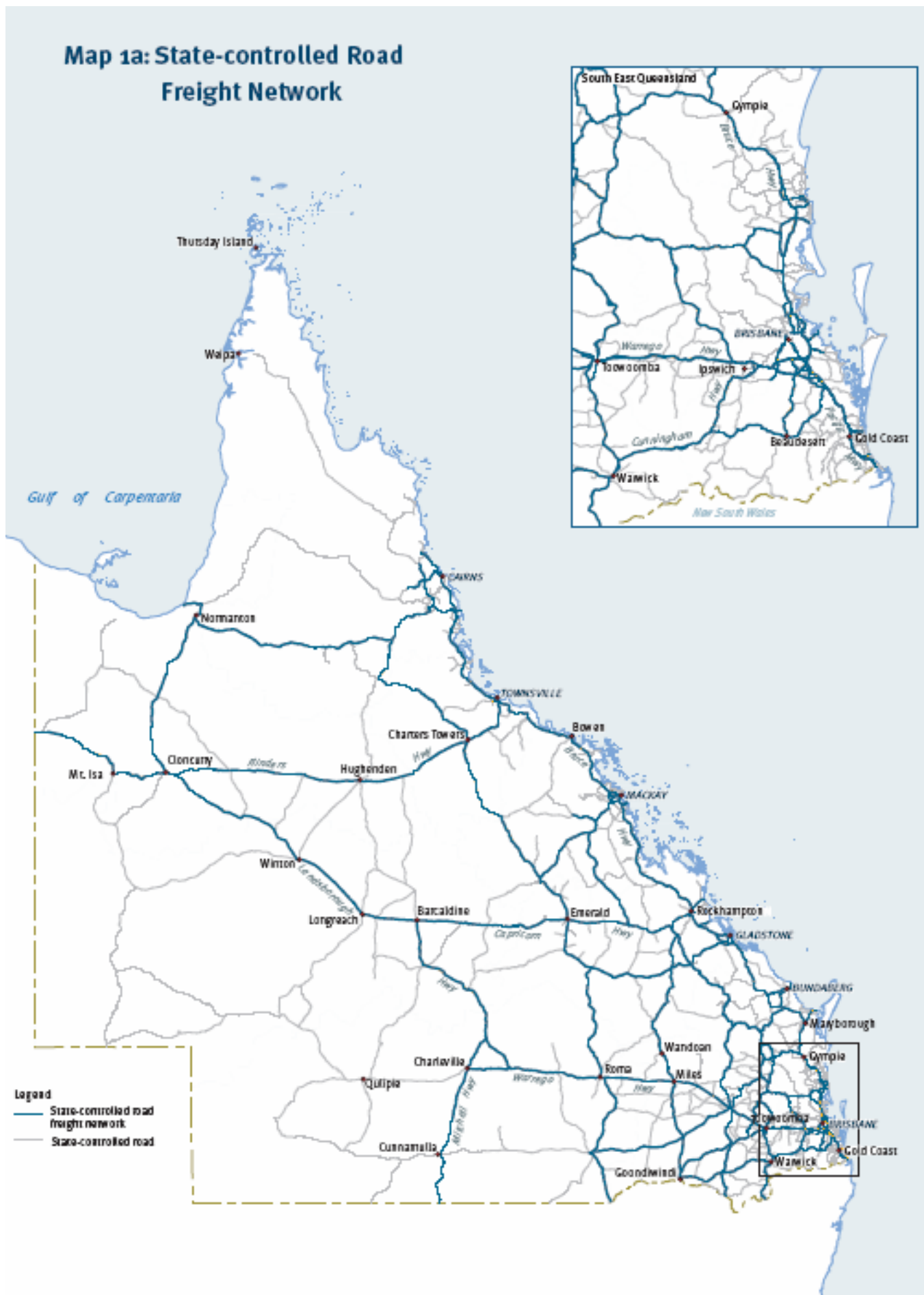
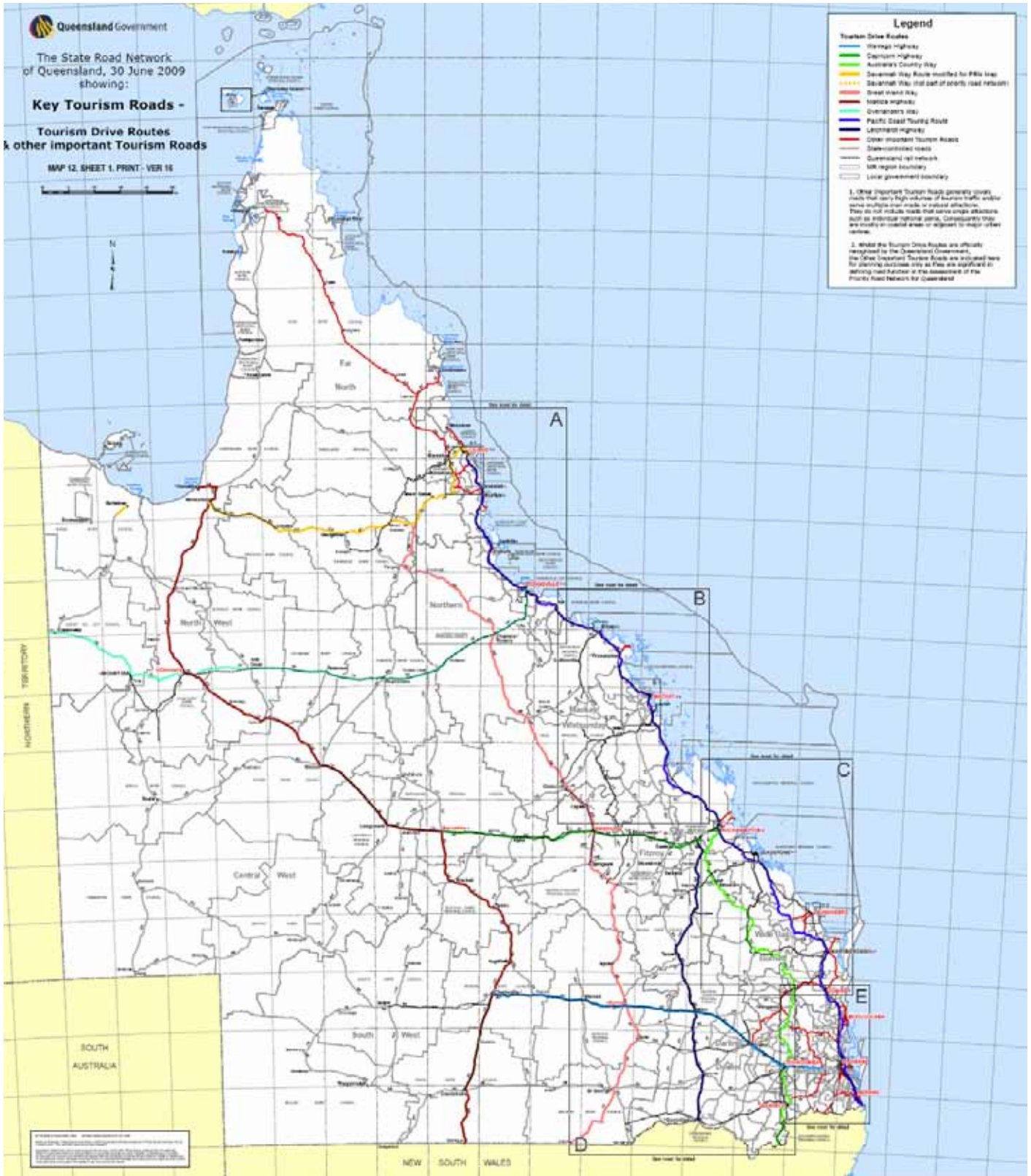


Figure 7.8: RNIG STATE-CONTROLLED ROAD FREIGHT NETWORK



The RNIG also shows touring routes – shown as Figure 7.9, with the Bruce Highway being the Pacific Coast Touring Route, the Miles-Rockhampton section designated only as the Leichhardt Highway and the Roma, Emerald and Charters Towers section designated as the Great Inland Way.

Figure 7.9: RNIG KEY TOURISM ROAD NETWORK



The broader issue of how TMR allocates priorities and road funding has been discussed in section 7.3.3 and in section 7.1, along with whether and how the QTLC should seek advice from TMR in order to influence efficient supply chain outcomes.

In this Brisbane and North Queensland corridor, there are two aspects for the QTLC and its stakeholders to consider regarding road freight and supply chain priorities, being whether:

- it has sufficient information of TMR processes to provide informed comment on the different PRN levels that TMR has established for the three road corridors
- it has other information that may change the priority road network settings.

Industry seeks an Inland Freight Corridor (IFC) linking Roma in the south to Charters Towers in the North, capable of accommodating high productivity vehicles (type 2 road trains and Level 4 PBS vehicles, Charters Towers to Clermont is already done) also including the provision for adequate parking bays and facilities along the corridor. One of the major benefits of this IFC would be facilitating the removal of significant truck traffic off the Bruce Highway

The QTLC also needs to consider how contestable the inland road corridors are for freight movement from the Bruce Highway (considering the particular supply chains involved, their freight movements and the level of HPV access on the corridors), or whether all three corridors mainly provide options when some are impacted by flooding. Without a Queensland Freight Model it is difficult for government and industry to analyse contestable corridors adequately.

While a Queensland Strategic Freight Model would be very helpful, there may be sufficient information from TMR and QTLC stakeholders and the industry to attempt analysis.

RECOMMENDATION

37. TMR engage with the QTLC to investigate supply chain benefits and necessary works for extending Type 2 road train and Level 4 PBS access between Roma and Charters Towers along the Inland Freight Corridor.

✪ Coastal shipping and ports

The movement of significant volumes of freight along road corridors has potential to impact on other road users and adjacent land uses. This particularly applies for large over-size, over-mass (OSOM) movements and in urban areas respectively, and for both road and rail.

Coastal shipping has potential to take significant volumes of freight and OSOM freight off landside corridors. Introducing a new mode into supply chain movements can require terminal investment and ongoing port charges.

Shipping is a commercial undertaking and if it was contestable with the landside modes for some types and volumes of freight cargo, there may already have been an entrant to Queensland's coastal shipping market. However, there are barriers to entry, including potential customers waiting until a coastal shipping service has been provided and existing contracts fulfilled before considering a commitment.

Discussion in Chapter 2 has noted the similarities between Queensland and Western Australia regarding the key industrial sectors and particularly the prominence of the mining sector. Both states also have a long coastline, although Queensland has six coastal cities with populations over 50,000 and three with more than 100,000 people.

Western Australia has a government-subsidised shipping service, operated by Jepsens.

In June 2012, the Freight and Logistics Council, Western Australia (FLCWA) released the Pilbara Logistics and Coastal Shipping Review, which has direct relevance to the concept of a coastal shipping service in Queensland. The report canvassed the volume and types of cargo that may be targeted, competition from other modes in terms of price, frequency of delivery and reliability, supply chain matters including shipping configuration, and government/government-owned corporation aspects including port equipment and landside access. It found only some of the 6.7 Mtpa Pilbara mining and LNG inputs involving fuel, ammonium nitrate, mobile mining equipment, mine consumables, and project cargo are contestable by a coastal shipping service. While finding a prima facie case for coastal shipping, the report recommends further discussion with shipping companies and investigations, while noting that time is of the essence.

The questions for Queensland revolve around the same issues as in Western Australia. A difference may be whether coastal shipping in Queensland has potential to attract two-way intrastate cargo. A second aspect is whether such a service could provide freight movement resilience before and after cyclones and major flooding.

The QTLC is well placed to assist TMR with supply chain information that would enable it to investigate the potential for coastal shipping. Such a study could be conducted in two phases, with the first being similar to the FLCWA study in considering:

- the ports to be served – e.g. Brisbane, Gladstone, Mackay and Townsville
- the freight movements with potential – e.g. import and export containers, mining plant and consumables and project cargo
- the type of vessel and its configuration for the freight demand
- the service product, including its frequency and cost, that would be contestable.

The study would desirably comment on societal and environmental impacts of the landside and maritime modes for the contestable cargo.

It could also estimate the start-up and ongoing costs and potential revenue, and the level of government start-up and ongoing support that may be required. The latter could be contrasted with the North Coast Line Transport Service Contracts and the BHAP's \$10.5 billion investment request. It would be particularly useful if the study could consider any investment savings on the landside modes in the corridor.

The second stage could finalise details about delivery.

RECOMMENDATION

38. TMR and DSDIP investigate the benefits, impacts and costs of a coastal shipping service for the Brisbane-North Queensland corridor in consultation with the QTLC, its stakeholders and the relevant ports.



Accountability for the development of the Queensland Ports Strategy lies with the Department of State Development, Infrastructure and Planning (DSDIP).

The Port of Brisbane is reasonably protected from encroachment on its land, but land use encroachment and community concern is limiting enhanced rail access.

Other ports in the Brisbane-North Queensland corridor are not as fortunate as the Port of Brisbane, and encroachment from both a land use and transport prospective requires management action.

The limited number, location and scale of ports in Queensland mean they are crucial for Queensland's export and import businesses. The QTLC is well-placed to assist government regarding supply chain advice for its preparation of a Queensland Ports Strategy. Some aspects in this report could be helpful, including the development of PRFRs and the Rail Network Operational (Efficiency) Policy.

RECOMMENDATION

39. The DSDIP consider landside access, encroachment and supply chain efficiency in developing the Queensland Ports Strategy.

★ Integration of modal corridors

The Brisbane and North Coast corridor is Queensland's most complex from a modal perspective. It contains three road routes, a rail line with two rail managers, and potentially can be served further by coastal shipping.

Future development of infrastructure in this corridor will potentially be less than required for its growing freight demand.

The funding for infrastructure investment needs to come from both the private and public sectors. As discussed previously, the private sector may facilitate investment depending on the quantum needed, the benefits and revenue resulting and providing sovereign risk is reduced as much as possible.

In relation to sovereign risk, the proposition that the Queensland Government consider a supply chain coordination framework is relevant. It is possible that sovereign risk would be reduced if the corridor was monitored and managed by a supply chain coordinator. Equally, other measures such as agreements between the relevant parties may accomplish a similar result, if these can be progressed. The quantum of funding needed for some concerns to be addressed will prove challenging for governments and industry.

In section 4.3, the concept of the QTLC providing supply chain coordinating services was discussed.

RECOMMENDATION

40. The Queensland Government consider whether a supply chain coordinator would add value and lead to enhanced private and more efficient public investment in the Brisbane to North Queensland corridor.

7.4 Surat Basin, Mount Isa and South Western Supply Chain Corridor

➔ 7.4.1 Supply chain description and freight demand

This north-west to south-east corridor provides capacity for freight movements between Brisbane and Mount Isa. It features a low-standard rail system between Brisbane and Charleville⁴⁷, and the Warrego and Landsborough Highways between Brisbane and Cloncurry and the Barkly Highway to Mount Isa⁴⁸.

The Warrego and Landsborough Highways are designated as Priority 1 roads in the RNIG. In the same document, both are designated as key freight routes and the Flinders Highway is also called the Overland Way drive tourism route.

The corridor is also serviced by a dispersed network of local government roads.

The Brisbane to Surat Basin and Mount Isa corridor services a vast area of regional Queensland, including Toowoomba, the Surat Basin and north-west Queensland. Commodities produced in this area are principally grain and livestock. As with supply chains in other corridors, the nature of the freight can vary along the corridor depending on where they are produced, transformed and then used domestically or exported.

As an example, cattle are raised in many areas serviced by this corridor. They may then be finished on pasture or in feedlots, or directly exported, or transported to abattoirs and then consumed as fresh or manufactured meat, either domestically or when exported.

The area is also a burgeoning energy province with domestic and international thermal coal production and international coal seam gas. The inputs to these sectors generate large volumes of freight movements, and particularly OSOM movements during the construction phase.

The Landsborough, Warrego, Leichhardt and Carnarvon Highways and local roads form the backbone for moving live cattle to fattening farms, feedlots and/or abattoirs. For these movements, Type 2 road trains are desired for efficiencies, but parts of the road network in proximity to higher population centres cannot accommodate them.

Landside grain to the Port of Brisbane is shared between the rail and road modes but has moved predominately

to the road mode, export coal is largely trafficked by rail. Of road exports to the Port of Brisbane from this area, as much as 85% use the Toowoomba range road while the remainder uses Cunningham's Gap.

The Toowoomba Sub-Regional Transport Study, Working Paper 4 references the 2008 rail freight task⁴⁹ on the West Moreton System as being 8 million tonnes per annum (Mtpa) comprising:

- bulk coal: between 6 and 7 Mtpa to Brisbane from coal mines on the Western line
- bulk grain in season: 0.8 Mtpa to the Port of Brisbane
- non-bulk commodities, including livestock, cotton and general freight: about 0.6 Mtpa mainly to /from South East Queensland.

The West Moreton System services five existing mines at New Acland, Commodore, Wilkie Creek, Kogan Creek and Cameby Downs, which supply thermal coal to domestic and international markets. It is understood that rail efficiencies have improved since 2008 so that coal traffic alone is about 9 Mtpa.

The Toowoomba Sub-Regional Transport Study, Working Paper 5 estimates the 2012 road freight task⁵⁰ of the Warrego Highway at Toowoomba as being 30 Mtpa.

The Surat Basin Economic Development Strategy predicted substantial growth in freight demand as the Surat Basin develops and population in the area, and particularly in Toowoomba, grows.

Forecasts of regional freight growth can change rapidly in response to global markets – which can influence bulk freight exports – and weather, affecting agriculture production and the availability of road and rail infrastructure. Since this report was commissioned, there has been a significant decline in coal export prices (in \$AUS terms) with at least three thermal coal mines in Queensland announced for closure. While there remain challenges, global energy demands indicate that the report's forecast trend of increased demand will eventuate in the medium and longer terms, provided the resource requirement for infrastructure can be provided.

⁴⁷ The rail sources in this section are the Queensland Rail website and the Toowoomba Sub-Regional Transport Study, working paper 4.

⁴⁸ The Cloncurry to Mount Isa section is discussed in more detail in sub-section 7.5

⁴⁹ Surat Basin Regional Transport Strategy, June 2011, GHD, for the Department of Transport and Main Roads.

⁵⁰ Measured as gross vehicle mass

★ Rail

As discussed in section 5.1, the Westlander provides twice-weekly Traveltrain services on the Western Line between Brisbane and Charleville. In *The Courier Mail* on 12 February 2013, it was reported that the subsidy per passenger was \$2236 for rail services. This compares with bus passengers between Brisbane and Charleville being subsidised by \$11.63 per passenger, and plane travellers \$487.

The West Moreton System between Rosewood and Miles has portions of a low standard, particularly for the 40 kilometre heritage listed section in proximity to the Great Dividing Range near Toowoomba. It continues as the low standard, under-utilised Western System between Miles and Charleville.

The rail system is close to the train path and freight carrying capacity determined by the current alignment, allowable axle loading and number and length of passing loops. This limits capacity to 224 train paths weekly.

While additional rail capacity can be delivered through investment on commercial terms, the quantum of investment required compared with the likely benefit to the private sector has mitigated against private sector funding even over the last several years during which commodity prices peaked.

Planning for the rail range crossing proposals in the vicinity of Toowoomba have been developed along separate corridors by the federal and state government respectively, to get best value from their assumed design functions and speeds. The Australian Rail Track Corporation (ARTC) has specified its upgrade proposal as being principally freight related and so accepted an 80 km/h design speed. The Queensland Government has nominated the function to be for both freight and high-speed (200 km/h) passenger trains. The proposal alignments and their costs vary significantly. In these circumstances, there are no funded proposals to address the rail range crossing deficiencies.

To the east, the rail line is susceptible to flooding and washouts during major weather events similar to those that have occurred during the last three years, and it is impacted by Citytrain traffic as stated in Chapter 5.

The Queensland Government has planned and preserved a southern freight rail corridor, but no funding for construction has been allocated.

★ Road network

The Warrego Highway extends 714 km between Brisbane and Charleville, with the Landsborough Highway servicing Morven (to the east of Charleville) to just east of Cloncurry. Both are elements of the National Land Transport Network (NLTN).

The Warrego Highway⁵¹ is the second highest-trafficked route after the Bruce Highway, and services the burgeoning energy, as well as agriculture and commercial sectors, for a population that will grow by 95,000 people by 2031.

The Warrego Highway between Brisbane and Toowoomba is largely duplicated and bypasses most urban areas with the exception of Withcott, but with many important intersections remaining at grade. Much of the divided carriageway is decades old, of a standard commensurate when it was constructed, and suffering pavement distress. The size and mass of the OSOM task to transport inports to the mining coal seam gas industries in the Surat was not foreseen at the time the Warrego Highway was duplicated.

The Toowoomba road range crossing⁵² reaches an altitude of 642 metres. The Toowoomba Range Western Freight Corridor (TRWFC) is nominated as one of the Queensland Government's six Critical Priority Projects in its policy document, *Building Queensland's Future*. Projects Queensland is preparing a business case for the staged construction of a second road range crossing between Toowoomba and Highfields. This alignment is one of two viable heavy vehicle routes between South East Queensland, south and western Queensland, north-west New South Wales and Victoria, and north-west Queensland.

The Queensland and Australian Government had committed nearly \$0.25 billion towards investment upgrades⁵³ of the Warrego Highway. This will go some way to ameliorating some deficiencies, however, it will not address most of the high-investment infrastructure required.

Until the second road range crossing is constructed, the Warrego Highway through Toowoomba remains inadequate for the volume of freight being transport across it. Between Toowoomba, Oakey and Dalby, it remains inadequate for the combined freight and passenger usage. Further west, it suffers from under-investment.

West of Toowoomba, the Warrego Highway is a two-lane rural highway. It intersects with the Leichhardt Highway at Miles and the Carnarvon Highway at Roma, and at these locations becomes the conduit from areas north and south to Toowoomba and Brisbane.

⁵¹ *Warrego Highway Upgrade Strategy, Queensland Government, February 2012*

⁵² *The road sources in this section are the Toowoomba Sub-Regional Transport Study, Working Paper 5, except where referenced.*

⁵³ *Warrego Highway Upgrade Strategy, Queensland Government, February 2012*

At Morven, the Landsborough Highway continues to just east of Cloncurry, providing the road service to Barcaldine and Longreach and other rural communities.

The National Truck Accident Research Centre (NTARC) has produced biannual truck safety reports every two years since at least 2005. The 2013 report analysis of the 2011 NTARC crash data identifies the Warrego and Bruce Highways as having the worst safety standard of NLTN links in Australia.

➔ 7.4.2 Challenges

✪ Rail

Because the very old, heritage-listed portion of the West Moreton system crossing the range operates with low axle load limits (15.75t), there are limited options for providing capacity for any expansion of the coal mining or energy sectors in the Surat Basin, nor to increases in agriculture freight.

The Integrated Transport Strategy for Agriculture Commodities – Grain showed that between 2001-2 and 2008-9 winter grain crops in Queensland varied from a low of 749,000 tonnes to 2.368 Mtpa. Of this an average of about 0.75 Mtpa was hauled on the West Moreton system. While traditionally rail contributed 11 train sets to grain haulage, this had fallen to five.

Changes in the global grain market concentrate exports in the January to June period for highest pricing. The ability of rail to meet increased demands from recent high grain and cotton yield is constrained by low axle load limits and inefficient loading practices. The loading of grain trains can take eight hours so that train utilisation efficiency is poor. Newer silos typically operating on train lines can load and unload train contents in two hours. Also the use of 9 foot 6 inch containers by the cotton growers is limited to 8.6 tunnel heights.

On-farm grain storage has increased and this tends to be serviced from farm to destination by road.

With the available rail capacity increasingly committed to the 24/7 movement of coal traffic to the Port of Brisbane during the dry years during the early 2000s, traditional cotton, grain, cattle and fuel rail markets have been impacted. As few as four train paths per week may be preserved for agricultural services and another 18 for general non-coal traffic. These arrangements do not allow for significant growth in the agricultural product market, but paradoxically all train paths are not used every week.



The federal and state governments have adopted different rail alignments and design standards for a new rail range crossing at Toowoomba, making joint government funding unlikely at this stage. The lack of an agreed planning alignment also decreases the likelihood of private sector funding, other than for interim proposals involving new passing loops, and possibly government/private funding for removing most freight trains out of Toowoomba's northern suburbs.

The Westlander (subsidised by the Queensland Government) impacts on the available capacity for freight train services, which western communities and businesses also depend on.

There is a very small risk that the existing rail range crossing may suffer a more severe landslide than in 2011, closing it for weeks or months.

Effectively all coal resources in the Surat Basin not already being serviced by rail are 'infrastructure locked'; that is, they cannot be mined as there is no cost-effective landside mode to access a port or the domestic market in South East Queensland with the mine products.

✦ Road

East of Toowoomba, the Warrego Highway's dual carriageway is becoming dated, the at-grade intersections hazardous, and the highway is susceptible to flooding.

The critical issue for the Warrego Highway and the supply chains it services is the range crossing at Toowoomba, with its mix of high traffic volumes, higher speed light passenger vehicles and very slow moving heavy vehicles on a poor and very steep alignment. A second issue is the stability of this road range crossing (and that at Cunningham's Gap, which is addressed subsequently).

A third issue is ensuring the significant increase in OSOM movements for delivery of construction cargo, plant and equipment for the forecast growth in coal seam gas development in a way that ensures road safety and doesn't impact on nearby communities.

With the Western Rail Line at effective capacity, all increase in freight traffic has to be carried by road. This is exacerbating the pressure on the Warrego Highway and the current road range crossing at Toowoomba. Use of road rather than rail to transport freight may be unsustainable in economic and social terms.

The Warrego Highway like the Landsborough Highway exhibits:

- flooding, which closes the highways in numerous locations
- safety impacts of increased traffic on two-lane sections and mixing of heavy vehicles, local traffic and drive-in, drive out traffic
- capacity from increased traffic and through cities and towns.



Most remote local government roads are unsealed, and some are unformed. In wet weather they can quickly become impassable and in dry weather badly corrugated.

➔ 7.4.3 Opportunities and priorities

✦ Rail

A review of the value of Westlander Traveltrain services between Brisbane and Charleville should be considered, in light of the fact there is a parallel, but much less subsidised, bus service available. Providing an improved bus service to any affected communities in place of the subsidised Westlander would provide opportunity for a small increase in freight train capacity. Development of an improved airport and air services at Toowoomba could play a part in ensuring regional connectivity.

There are proposals to address the West Moreton System capacity deficiencies on an interim and long-term basis, but without funding, neither will eventuate.

Short-term capacity could be increased with the installation of at least one extra passing loop in the critical section along the Toowoomba escarpment. This is yet to undergo investigatory design, but the order of funding for it may lie between \$20 million and \$50 million.

The Toowoomba Sub-Regional Transport Study, Working Paper 4, also suggested that providing a short tunnel linked to the existing rail sections east and west of the range would be able to remove the majority of trains, their traffic, dust, coal dust and noise impacts from much of Toowoomba's existing urban area, and also provide increased capacity if combined with an extra passing loop. This is yet to undergo investigatory design, but its order of funding may lie between \$90 million and \$150 million. With these benefits, there is potential for local and state government and private sector funding.



Funding of more than a billion dollars is required to upgrade the rail line across the Great Dividing Range near Toowoomba and the Little Liverpool Range under the ARTC proposal, and perhaps double that for the Queensland Government proposal. Any significant funding for a full upgrade is unlikely to be committed by governments or the private sector until the differences in federal and state government rail alignment planning are resolved.

As well as interim and long term infrastructure, there may be operational opportunities arising from the Queensland Government's desire to increase the use of the rail mode for agricultural products.

There may be potential to introduce a short haul rail service for grain consolidated west of Toowoomba to the Port of Brisbane. Charlton Wellcamp may provide a location, and this can be serviced by Type 1 road trains. Such a rail service could use any of the existing train paths which aren't being used otherwise. Alternatively, any relinquishment of the Westlander services may provide capacity.

Introducing a new type of dedicated short haul train has potential to attract new entrants to Queensland's above rail market.

The Integrated Transport Strategy for Agriculture Commodities – Grain is likely time-dated as it was completed in May 2009 and does not reflect demand arising from agricultural yields. Development of a Queensland Strategic Freight Model would allow current data and forecasts to be used and the likelihood of the multi-modal task to be assessed. Whether local governments have appetite to consider supporting rail solutions could be investigated.

In North America, there are several instances where locally governed cooperatives have taken over railway operations. For example, the Battle River New Generations Co-op in Alberta, Canada began loading grain in 2003 and in 2009 assumed ownership of the local grain line.

It may be that the dynamics of the agricultural industries and its logistics task have changed to the extent that rail may not be commercially competitive, at least without government support. In the interim, before a second road range crossing can be funded and constructed, there may be opportunity to relieve some of the road freight pressure through Toowoomba.

As well, short haul rail provides a genuine multi-modal response and would increase supply chain security.

RECOMMENDATIONS

41. The Queensland Government and Australian Government align their desired functions, design standards and planning for the proposed West Moreton System range crossing in the vicinity of Toowoomba.

42. The Queensland Government review the need for its subsidised Westlander Traveltrain service, providing that a comparable or improved bus service to the affected communities can be provided.

43. Queensland Rail develop a master plan containing interim costed proposals to increase capacity on the West Moreton System in the vicinity of Toowoomba.

44. The Queensland Government review the commercial and economic opportunity for a short haul rail service from west of Toowoomba to the Port of Brisbane for the grain commodity market and whether this could attract a new rail entrant to Queensland's above rail operations market.

★ Road

The Warrego Highway Upgrade Strategy outlines TMR's strategy and timeframe for investment relating to 41 projects over the next 20 years, albeit without funding allocated for many of these projects. The timings are generally realistic, although the plan for the second road range crossing at Toowoomba to take as long as a decade to be delivered is an issue (for reasons outlined in the previous section).

The Queensland Government has nominated the Toowoomba Range Western Freight Corridor (TRWFC) as one of six Critical Priority Projects in its policy document, Building Queensland's Future. TMR is preparing a business case for a staged construction, but will require Australian Government and possibly Toowoomba Regional Council funding for urban road connections and road transport funding through tolls.

Rail will need to be funded to increase a level of capacity in order for all future freight growth not to be diverted to road, and for the Surat Basin not to remain infrastructure-locked.

It may be that the business case for the TRWFC should encompass the:

- effects of the West Moreton System rail upgrades, i.e. with and without versions
- development of an Inland Freight Corridor (IFC) linking Roma in the south to Charters Towers in the north for HPVs.

A particularly important near-term issue is addressing the growth in OSOM movements in this corridor to service the forecast growth in the energy sector particularly. As stated previously, project cargo and plant to service this growth has to be moved by road as the heritage-listed tunnels on the West Moreton line do not provide an OSOM 'envelope' of sufficient size for the desired movements.

Another issue is the provision of sufficient layover and pull-over bays on whichever route or routes are designated by TMR. These allow OSOM movements, which may be in convoys to pull over and allow approaching and following vehicles to pass. TMR may need to develop a policy on the allowable delays to other light and heavy vehicle road users to accommodate OSOM movements.

The Commission of Audit recommended that police no longer be used for the escort task, as Western Australia introduced in January 2013.

TMR has recognised this issue and has convened a working group to assist it.

The Landsborough, Leichhardt and Carnarvon Highways have similar safety and flooding issues as the Warrego Highway, but without the same traffic pressures. Nor do they have the same impacts on as many people.

RECOMMENDATIONS

45. The Queensland Government and Australian Governments collaborate to develop a suitable option and a business case as a basis for aligning funding for the Toowoomba Range Western Freight Corridor, comprising a second road range crossing and ring road in the vicinity of Toowoomba, to unlock the supply chain efficiencies of Toowoomba, the Surat Basin, north-west Queensland and north-west New South Wales.

46. TMR and Toowoomba Regional Council collaborate to fund connection of its arterial and local roads to the Toowoomba Range Western Freight Corridor.

47. TMR develop and implement an OSOM plan to enable supply chain inputs to develop the Surat Basin development that is safe and acceptable to the affected communities and minimises impact the security of other supply chains.

7.4.4 South Western supply chain description and freight demand

The South West Queensland area comprises the Queensland Rail South Western system, a 15.75 tal line of 610 kilometres, running from Toowoomba to Dirranbandi via Warwick and to Wallangarra into northern New South Wales, as well as the Milmerran branch line. This system is an off-shoot of the West Moreton System.

The National Land Transport Network Cunningham Highway links Warwick with Ipswich and then continues as a national link south on the New England Highway. The two highways provide an inland road corridor from western Brisbane into New South Wales as far as Newcastle, then via the Pacific Highway to Sydney.

★ Supply chains and freight demand

The South Western System predominately carries some containerised freight and grain (less than 1 Mtpa in total).

Other important supply chains service the grain, cattle, fruit and sheep agriculture sectors. These primarily use road transport.

★ Rail

The South Western System is a branch system of the Western System, and does not connect to the rail network of New South Wales. It is an old, low tonnage rail system.

✦ Road network⁵⁴

The Cunningham Highway and New England Highways are two-lane roads, except through rural towns and when crossing ranges.

The Cunningham Highway – Figure 7.1 refers – carries approximately 15 Mtpa of freight between Ipswich and Warwick, and 5–10 Mtpa as it continues to Goondiwindi. South of Warwick, the New England Highway also carries 5–10 Mtpa.

A key issue is traversing Cunningham's Gap, which has periodically been affected by landslips during rain events. For many months during 2011, it was reduced from four lanes to a single lane, serving traffic in both directions.

The corridor is also serviced by a dispersed network of local government roads. Outside towns and communities, many locally-controlled roads are unsealed.

➔ 7.4.5 South Western challenges

✦ Rail

The South Western System is able to accommodate the existing level of freight generated by the agriculture sector.

There are many challenges to any change in demand, including a poor alignment and standard, its interaction with urban areas – especially in Toowoomba – and the unavailability of extra train paths, as the West Moreton System line is at capacity at the Toowoomba Range.

✦ Road

A key issue for the road network is the continuing risk to landslip of the Cunningham Highway at Cunningham's Gap. With Stanthorpe having been bypassed, Warwick remains the urban centre most impacted by traffic and heavy freight vehicles.

Otherwise the road system is able to accommodate the level of freight generated by south-western supply chains.

West of Warwick and Stanthorpe, both state and local roads are susceptible to general flooding and to the east they are susceptible to either flash-flooding or general flooding. Enforcement of load limits takes resourcing, particularly during periods where pavements are weather weakened.

The movement of OSOM freight to service the development of the Surat Basin is a challenge for the Cunningham Highway and its other road users. Much of the OSOM movements are police escorted, and recently applications for permits are being serviced by a 'one-stop shop' in Brisbane. The mix of OSOM movements, road trains and the winter drive tourism market is a safety risk.

Like the highways, the sealed local government roads are susceptible to flooding. Many other local government roads are unsealed. In wet weather they can quickly become impassable and in dry weather badly corrugated.

➔ 7.4.6 South Western opportunities and priorities

✦ Rail

The ARTC has planned a new connection to Toowoomba's west as part of its proposed Melbourne-Queensland link. This would overcome the poor standard alignment of the South Western and West Moreton Systems, from west of Toowoomba to Brisbane.

The difficulty in funding this or the state-planned rail lines across the Toowoomba Range has been outlined in sub-section 7.4.3.

✦ Road networks

The Cunningham and New England Highways do not form one of the six Critical Priority Projects in the Building Queensland's Future policy document.

TMR has instituted an active program of building rest areas and passing bays, to help manage fatigue and delays where OSOM and other vehicle classes interact. It does this in consultation with the road transport industry through a rest area working group.

QTRIP allocates some funding for road enhancement and maintenance. It is unknown whether the extent of funding is sufficient to provide reliability and capacity for the expected growth in freight demand in both the OSOM and high productivity classes.

The funding situation described above is likely to be worse for local roads carrying freight, albeit with low traffic volumes.

⁵⁴ Source for information in this subsection is the TMR website, 18 February 2013

7.5 Townsville to Mount Isa supply chain corridor

➤ 7.5.1 Supply chain description and freight demand

This west-east corridor provides capacity for freight movements between Mount Isa and Townsville, as well as a westward connection to the Northern Territory. It features a rail line and a largely parallel Flinders Highway between Townsville and Cloncurry and on to Mount Isa. The Barkly Highway connects Cloncurry and Mount Isa with the Northern Territory. The rail line and the two highways are elements of the National Land Transport Network. The Flinders and Barkly Highways are designated Priority 1 roads in the RNIG. In the same document, both are key freight routes and are also called the Overland Way drive tourism route.

✦ Supply chains and freight demand

The North-West Queensland Minerals Province⁵⁵ is a world class deposit, producing high-quality copper, silver, lead, zinc, gold and phosphate deposits. In 2011/12, mineral production for the region was \$6.67 billion⁵⁶, largely of base metals from about 12 significant mines.

Many mines are at a mature stage, and new discoveries will rely on existing infrastructure. As a result of strong international demand for commodities, exploration in the North West Minerals Province has increased significantly in recent years.

Some metals are concentrated and others refined, and these, as well as fertiliser, were exported through the Port of Townsville. In 2011/12, exports through Townsville Port comprised nearly 4.8 Mtpa, of which nearly 0.9 Mtpa was fertiliser.

Closer to Townsville, the North East Minerals province produces magnetite, gold, copper and silver for export. Nickel and cobalt is exported from the Yabulu Refinery and timber is also exported.

The Townsville-Mount Isa corridor also produces cattle, which may be exported through Darwin, or transported to finishing stations, feedlots and/or abattoirs for domestic or international consumption.

The Flinders and Barkly Highways are used for the transit of defence equipment between the defence facilities in Townsville and Darwin.

⁵⁵ Queensland Department of Natural Resources and Mines website, 12 February 2013

⁵⁶ Queensland Rail website, 12 February 2013

✦ Rail

The Mount Isa Line has 1030 km of track, which extends from Stuart (near Townsville) to Mount Isa and includes the Phosphate Hill branch. The line is the critical link from the North West Minerals Province to the Port of Townsville where the majority of bulk products are exported. The Mount Isa Line is of particular national interest as it carries 75% of Queensland's non-coal mineral output.

Last year, 5.8 million tonnes of product were railed on the Mount Isa corridor.

The line also services a number of communities through the Inlander Traveltrain twice-weekly passenger transport⁵⁷, as well as conveying general freight, and remains a major employer along the corridor.

The Townsville-Mount Isa Rail Line is of a standard generally compatible with its low-volume, high-value freight, with investment in maintenance and enhancements being funded by revenue derived from users. The line remains susceptible to flooding and speed restrictions can be imposed during extreme heat conditions.

In spite of three years of record tonnage to the port on the current alignment, rail access must have been of sufficient concern for TMR and Queensland Rail⁵⁸ to have planned and preserved an eastern access rail corridor to Townsville Port. Funding of about \$280 million is required for its construction and the private sector is expected to provide it either up-front, through higher charges, or a combination.

⁵⁷ Subsidy per passenger on the Inlander is \$2038, *The Courier Mail*, 12 February 2013

⁵⁸ Mt Isa Line Infrastructure Master Plan, Queensland Rail, 2012

In the Mount Isa Line Infrastructure Master Plan, Queensland Rail, as the 'rail owner' outlines the enhancements necessary for the single track corridor to cater for future freight demand to be serviced by accredited freight train operators, currently Aurizon and Pacific National Queensland, and for other accredited rail operators seeking access. Queensland Rail has recently installed extra sections of concrete sleepers, weather monitoring stations, automated geometry measuring system, hot box detectors, overload detectors and level crossing upgrades to help address maintenance, operating, heat-affected track, safety risks and flooding susceptibility.

Planning for this rail line seems much more advanced than for the North Coast Line and Western Line. This planning is transparent and seems to provide capacity, reliability and potential for expansion so that corridor mining resources are not 'infrastructure locked'. It also informs potential users and their clients of the quantum of funding that is required to upgrade the line for future demand, making this an open and transparent process.

★ Road network⁵⁹

The Flinders Highway services Townsville to Cloncurry, via Charters Towers, Hughenden, Richmond and Julia Creek. At Cloncurry, the Barkly Highway provides road access to Mount Isa and to the Northern Territory. In Townsville, the Flinders Highway carries 5–10 Mtpa of freight, but in regional and remote areas it carries more than 1 Mtpa along its route.

The Flinders Highway is the spine providing access to the Wills, Karumba, Kennedy, Gulf, Burke and Diamantina Developmental Roads, many of which are not sealed, or only to a four-metre width. All of these roads are two lane, except through some towns and communities where they may be wider, and susceptible to flooding. Some of the developmental roads may be closed for long periods during the monsoonal period.

The Townsville Port Access Road has just been completed at a cost of \$190 million and provides a 10-kilometre, HPV access between the Flinders and Bruce Highways to Townsville Port. It also reduces heavy vehicle traffic through residential areas.

The corridor is also serviced by a dispersed network of local government roads. Outside towns and communities, these are invariably unsealed.

59 Source for information and figure in this subsection is the TMR website, 12 February 2013



**ROAD WIDENS
2 km**

Figure 7.10: NEWLY SEALED DEVELOPMENT ROAD



➔ 7.5.2 Challenges

★ Rail

As discussed in section 5.1, the Inlander provides twice-weekly Traveltrain services on the Mount Isa Line between Townsville and Mount Isa. These have potential to impact on rail servicing the substantial freight task, both by taking up train path opportunities and also as passenger services must be given priority. In The Courier Mail of 12 February 2013, it was reported that the subsidy per passenger was \$2038 for the Inlander rail services.

Providing the eastern access rail corridor will be a significant one-off cost in the vicinity of \$280 million. This will have to be recovered from new and/or existing customers.

Alternatively, reallocating Queensland Government Traveltrain funds towards an eastern access rail corridor may provide greater benefits.

In May 2012, Juturna Consulting provided a 50 Year Freight Infrastructure Planning report for the Mount Isa Townsville Economic Zone (MITEZ) and Infrastructure Australia. The study was collaborative between the seven local governments and industries forming the MITEZ. MITEZ communities recognised their supply chain dependence and took ownership of the recommendations, following extensive consultation and economic analyses with state departmental input. The study found:

- the modal connections of the corridor supply chain were not co-ordinated
- there was a lack of data about inefficiencies in the intermodal operations of the supply chain, monopoly risks for road and ports, and the melding of low/medium volume-high value commodities with high volume-low value commodities such as coal
- environmental and land side encroachment risks to the Port of Townsville.

Planning and coordination of government ‘monopoly’ assets presents particular challenges where industry is expected to provide revenue for upgrade investments, but may not have information about other users and their use or whether the rail line operations is optimised. Section 4.3 describes another policy option, whereby it is suggested that government could trial the provision of some common use infrastructure but that in this instance, freight information is made publicly available.

✦ Road

The Flinders Highway is the two-lane sealed road carrying much of the inputs to the mining sector and agricultural sector outputs. There are truck impacts through the towns it traverses. The mix of very large road trains and the winter drive tourism market is a continuing safety issue. Enforcement of load limits takes resourcing, particularly during periods where pavements are weather weakened.

All these comments apply to the Barkly Highway as well.

The Wills, Karumba, Kennedy, Gulf, Burke and Diamantina Developmental Roads have long lengths of unsealed sections, or are sealed only to a four-metre width. There is a program of sealing, an example of which is shown in Figure 7.10, but it is likely to be many years or even decades before all are sealed. Even when all the development roads are sealed, they will remain susceptible to flooding, and may be closed or load limited for long periods during the monsoonal period.

Most remote local government roads are unsealed, and some are unformed. In wet weather they can quickly become impassable and in dry weather badly corrugated.

➔ 7.5.3 Opportunities and priorities

✦ Rail

Queensland Government funding for the Inlander may be able to be applied more productively.

- Subsidising a comparable quality bus service is likely to cost much less, based on The Courier Mail reports for the Westlander described in section 7.4.
- This would allow some surplus funds to be applied to the completion of rail’s Eastern Access Corridor, removing freight trains and their impacts from the existing rail alignment.

The Mount Isa Line Master Plan was completed by Queensland Rail in 2012. It outlines the issues including capacity along the rail line, and the projects and their associated costs intended to address these so that different expansions in capacity can be accommodated. This initiative allows the mining and energy sectors, and the rail operators that may service them, to incorporate the necessary infrastructure funding required for any potential mine potentially to be serviced by the corridor to the Port of Townsville, or possibly a future line to Abbot Point, into their project considerations.

Proponents seeking to use rail for their products are advised in the Mount Isa Line Master Plan that:

- an extra 2 Mtpa from the vicinity of Cloncurry to Townsville would require infrastructure investment of just over \$450 million, with a construction timeframe of two years
- an extra 10 Mtpa for coal from Hughenden to Townsville Port would require infrastructure investment of \$720 million, with a construction timeframe of three years.

The Queensland Rail Mount Isa Line Master Plan planning initiative contributes information in an open and transparent manner which will assist various proponents. Such master planning would assist potential rail users in other corridors such as the North Coast Line and Western System.

RECOMMENDATIONS

48. The Queensland Government review the need for its subsidised Inlander Traveltrain service, providing that a comparable quality bus service to the affected communities can be provided.

49. Queensland Rail develop publicly-available infrastructure master plans for the North Coast Line and the Western System, as it has done for the Mount Isa to Townsville system.

★ Intermodal

The MITEZ report indicated the potential value of a supply chain coordinator in corridors with supply chains exhibiting complexities and monopoly suppliers such as the Mount Isa Townsville corridor. The objectives, functions and resources of the MITEZ supply chain coordinator would need to be established. The functions could include planning, operational, infrastructure and investment matters.

Building on the previous MITEZ work, the Queensland Government was successful in securing funding for infrastructure planning from the federal government's Regional Infrastructure Fund (RIF), for the Mount Isa to Townsville corridor.

The Queensland Government, through its Department of State Development, Infrastructure and Planning (DSDIP), has recently called tenders for the Demand Analysis, Infrastructure Capacity Audit and Supply Chain Coordination for the North Queensland Resources Chain Project.

This study should play a role reviewing the role and functions of supply chain coordination and provide policy guidance about a confidentiality framework, perhaps in consultation with the QTLC and other third parties. To gain access to better data about demand, supply, inefficiencies, risk and commercial issues, a confidentiality framework would be needed. Supply chain coordination could identify issues, prioritise these and develop operational, infrastructure and investment options in consultation with supply chain participants for addressing them.

Having a supply chain co-ordinator framework in place would be an important first step. Whether a supply chain coordinator is the best approach for the MITEZ corridor or whether a lower cost approach as is being pursued by the North Queensland Resources Supply Chain Steering Committee can be successful, is another consideration.

The study should also detail articulation of the perceived imperfections in the current system of planning and investment and how these perceived imperfections would be addressed by a supply chain coordinator or a lower cost alternative, if the current conditions under which planning occurs remain in place.

RECOMMENDATION

50. The Queensland Government review the role of a supply chain coordinator, establish a policy framework and regulate as necessary.

This is a role the QTLC could investigate further and consider for itself, perhaps in a public/private sector advisory board framework.

The QTLC supports the DSDIP focus on collecting data, auditing infrastructure and supply chain coordination in this and other key resource corridors.

Should the DSDIP work in the North Queensland Resources Supply Chain Corridor be successful, the lessons learned should be extended to other supply chain corridors outlined in this report, where similar conditions apply.

★ Road

The Townsville-Mount Isa supply chain corridor is not one of the six Critical Priority Projects in the Building Queensland's Future policy document.

QTRIP allocates some funding for road sealing and maintenance. It is not known whether this is sufficient to provide reliability and capacity for the expected growth in freight demand. The situation is likely to be worse for local roads carrying freight.

The outcome of the proposed DSDIP projects described above will influence future planning and investment in this corridor.

7.6 Central Queensland

➤ 7.6.1 Supply chain description and freight demand

The Central Queensland area features the Aurizon rail system which, although of national importance, is not part of the National Land Transport Network. This rail system interacts with the North Coast Line along the coast as outlined in section 7.3.

None of the Peak Downs, Capricorn and Dawson Highways connecting central Queensland to Mackay, Rockhampton and Gladstone respectively are parts of the National Land Transport Network. The Peak Downs Highway is a Priority 1 road to Clermont (which category extends to Emerald), the Capricorn Highway is a Priority 1 road to Emerald and the Dawson Highway nearly to Moura. None of the highways feature a drive tourism name, although all three highways are key freight routes.

Information in this sub-section is derived from the Aurizon and TMR websites and from Figure 7.6.

★ Supply chains and freight demand

Coal extraction⁶⁰ from the Bowen Basin initiates the dominant regional supply chain.

Aurizon's Moura and Blackwater systems carry 11.3 and 58.3 Mtpa respectively to Gladstone for consumption and export. The systems' coal is transported to Gladstone Power Stations, Comalco Refinery (Rio Tinto Alcan), Queensland Alumina Limited (QAL) and Cement Australia and the RG Tanna and Barney Point coal export terminals at the Port of Gladstone.

Aurizon's Newlands Line carries 17.5 Mtpa primarily to Abbott Point for export.

The Goonyella line services 30 mines and carries 99.7 Mtpa to the Hay Point and Dalrymple Bay export terminals. Inputs to the coal mining sector are road based. Other important road-based supply chains service the grain, cattle, cotton and citrus agriculture sectors.

★ Rail

Aurizon's two systems carrying the most freight are substantially electrified. The two smaller ones use diesel trains.

Key to the coal supply chain is the provision of future capacity on the rail lines and the respective ports. All are either private companies or government-owned corporations, subject to review by the Queensland Competition Authority.

There has been much recent investment in the rail lines and ports, and more is planned. For example, it is planned to link the Newlands and Goonyella lines; the Surat Basin Rail is planned to connect Aurizon's Moura line with Queensland Rail's Western System at Wandoan; and port expansion at Gladstone and elsewhere have been announced.

It would appear that returns for both the rail and port systems are sufficient to cater for mining sector growth, including to the Galilee coal basin.

★ Road network⁶¹

The Peak Downs Highway is predominately a two-lane road. It services the coal mines, and rural towns including Clermont town with its cattle yards. It carries 5–10 Mtpa⁶² of freight, with mining inputs travelling in one direction and agriculture outputs towards the coast. The Eton Range crossing is being upgraded currently.

Movement of OSOM mining and energy inputs associated with the continuing development of the coal mining and coal seam gas energy sectors is impacting other road users and adjacent communities.

Figure 7.11 shows movement of a 167 tonne Komatsu 960E Dump Truck Chassis (13m, 8.6m, 6.1m) up the Eton Range on the Peak Downs Highway between Mackay and the Bowen Basin coalfields, using a 16-line heavy load platform (16x8) 200 tonne rated on draw bar with three Mack prime movers. The load had an overall length of 65.5 meters.

Note the heavy load platform and cargo intrudes noticeably into the single down lane, so that approaching traffic would have been stopped until the OSOM vehicle reached the passing bay. Also, the dump truck tyres have been removed to allow travel under the Goonyella System's electricity lines.

While the impacts of OSOM movements are being better managed operationally and, with increasing provision of passing bays and road upgrades, forecast growth will require continuing monitoring, operational management and investment.

⁶⁰ Source for information in this subsection is the Aurizon website, 17 February 2013

⁶¹ Source for information in this subsection is the TMR website, 17 February 2013

⁶² Source for freight demand is Figure 7.6

Figure 7.11: 165 TONNE OSOM UP THE ETON RANGE ON PEAK DOWNS HIGHWAY



Source: PTT Out of Gauge Project Cargo report for the FLCWA, May 2012

The Capricorn Highway is a two-lane sealed road between Rockhampton, Emerald and Barcaldine and other rural communities. It carries 10-15 Mtpa near Rockhampton, then 5-10 Mtpa to Dingo, 1-5 Mtpa past Emerald, and less than 1 Mtpa to its intersection with the Landsborough Highway. The Capricorn Highway is the east-west spine for much of the corridor's agriculture sector and is intersected by both the inland road routes described in sub-section 7.3. It is also impacted by the electrified Blackwater Rail System and is used for OSOM movements.

The Dawson Highway carries only 1-5 Mtpa to Biloela and Banana and less than 1 Mtpa thereafter. It also services mining input OSOM movements.

The corridor is also serviced by a dispersed network of local government roads. Outside towns and communities, many locally-controlled roads are unsealed.

West of the range, the roads are susceptible to general flooding and to the east, either flash-flooding or general flooding, especially in proximity to Rockhampton.

➔ 7.6.2 Challenges

★ Rail

As discussed in section 5.1, the Spirit of the Outback provides twice-weekly Traveltrain services on the North Coast Line to Rockhampton, then the Blackwater system to Emerald and Longreach. Its subsidy per passenger was not quoted in The Courier Mail of 12 February 2013.

As discussed in 7.6.1, there is sufficient demand for rail services to carry coal so that any rail challenge is able to be met.

A related intermodal issue is the ability of the main coal export ports to develop capacity to cater for forecast growth with the increasing sensitivity of seaside environmental issues and landside encroachment.

✦ Road

The Peak Downs, Capricorn and, to a reduced extent, Dawson Highways are all two-lane sealed roads carrying much of the inputs to the mining sector and agricultural sector outputs. There are truck impacts through the towns they traverse. The mix of OSOM movements, road trains and the winter drive tourism market is a safety risk. Enforcement of load limits takes resourcing, particularly during periods where pavements are weather weakened.

The continuing development of the four rail systems for the single category of coal movement is continuing to drive agriculture inputs and outputs onto road, where they are moved by high productivity vehicles (HPV). These HPV freight vehicles interact with OSOM vehicles, which they are unable to pass on the two-lane roads.

The movement of OSOM freight is the major challenge in this corridor. Much of it is police escorted, and recently applications for permits are being serviced by a ‘one-stop shop’ in Brisbane.

Like the highways, the sealed local government roads are susceptible to flooding. Many other local government roads are unsealed. In wet weather they can quickly become impassable and in dry weather badly corrugated.

➔ 7.6.3 Opportunities and priorities

✦ Rail and ports

For the coal rail lines that carry nearly 190 Mtpa, there is currently sufficient investment to cater for forecast expansion.

While there may be more complexity and sensitivity associated with ports, the same investment opportunities should result in the same outcome.

Under the National Ports Strategy, the Queensland Government, through the Department of State Development, Infrastructure and Planning (DSDIP), is developing a Queensland Ports Strategy. It will be important to ensure that this strategy incorporates the necessary policy and governance so that the planning, operation, funding and development of ports and their landside access can accommodate the port’s forecast growth. The strategy may also consider the impact of port operations and enhancement on port charges, and their impact of the efficiency of export supply chains.

The Queensland Government has also obtained funding from the federal government’s Regional Infrastructure Fund (RIF) to develop an infrastructure planning framework for the Galilee and Bowen Basins in Central Queensland. The planning framework, among other things, will identify bottlenecks in transport infrastructure networks for the region.

RECOMMENDATION

51. DSDIP ensures development of the Queensland Ports Strategy encompasses the policy and governance to accommodate landside and seaside planning, operations, funding and enhancement necessary for Queensland’s economic development.

✦ Road networks

The three east-west highways serving supply chains in the Central Queensland area do not form one of the six Critical Priority Projects in the Building Queensland’s Future policy document.

There has been some investment to accommodate the OSOM movements through range upgrading. TMR has instituted an active program of building rest areas and passing bays, to help manage fatigue and delays where OSOM and other vehicle classes interact. It does this in consultation with the road transport industry through a rest area working group.

QTRIP allocates some funding for road enhancement and maintenance. The Australian Government has provided funding for the upgrading of the Eton Range crossing of the Peak Highway.

It is unknown whether the extent of funding is sufficient to provide reliability and capacity for the expected growth in freight demand in both the OSOM and high productivity classes.

The situation described above is likely to be worse for local roads carrying freight, albeit with low traffic volumes.

7.7 Queensland to southern states

Information in this sub-section is drawn mainly from the TMR and Queensland Rail websites, from Figure 7.6 and the draft Transport for New South Wales Freight and Port Strategy.

The Brisbane-Sydney rail line is an element of the National Land Transport Network.

The Pacific, New England and Gore/Newell Highways service most of the interstate road freight task. All are elements of the National Land Transport Network, are Key Freight Routes and are Priority 1 roads in the State-controlled Priority Road Network Investment Guidelines (RNIG).

A number of other state-controlled and local government roads may cross the border, but east of the range they are affected by the Mount Warning caldera's mountainous rim, and those to the west of Stanthorpe and Goondiwindi service remote communities.

➔ 7.7.1 Supply chain description and freight demand

✦ Supply chains and freight demand

In Chapter 3, Figures 3.1 and 3.3 showed that Transport for New South Wales in its draft Freight and Ports Strategy estimated the Queensland/New South Wales freight task to be 28 Mtpa, of which 5 Mtpa represented the Sydney-Queensland demand.

Of this 5 Mtpa, it was stated in section 5.1.4 that the Interstate Rail Line carries approximately 2.5 Mtpa⁶³ of containerised freight traffic. Long distance road freight would carry the other 2.5 Mtpa.

East of the range, the Pacific Highway provides a connection for supply chains to the cities, towns and rural areas in northern New South Wales. It is also the most direct connection to Sydney, but traverses many urban areas on route. Figure 7.6 indicates that the Pacific Highway carries between 35–45 Mtpa for the section approaching the New South Wales border, but the estimate would be based on the location of the permanent counter, so may be an over-estimate.

There is a lack of data about what the Pacific Highway interstate supply chains comprise, but it would include the personal, household and business consumables supply chains. As an example, Figure 7.4 shows import containers destined for this area. Northern New South Wales also supplies some export traffic to Queensland from the abattoir in Kyogle⁶⁴.

The New England Highway provides a connection into New South Wales West of the range, via Ipswich, Warwick and Stanthorpe. As well as serving long haul traffic, it provides transport for the agricultural supply chains in northern New South Wales. By the time that the New England Highway crosses the border, it is only carrying 1–5 Mtpa, as shown in Figure 7.1.

The Gore and Leichhardt Highways approaching Goondiwindi carry 10–15 Mtpa (Figure 7.1). The freight tonnage crossing the Queensland border into the Newell Highway in New South Wales is less clear, as Goondiwindi is the junction for several important roads. Nevertheless, this route services western New South Wales and Melbourne and would carry more freight than the New England Highway.

The three highways connecting Queensland and New South Wales carry approximately 90% of the 28 Mtpa estimated interstate freight.

Many other roads connect Queensland and New South Wales. All carry less than 1 Mtpa.

✦ Rail

The north-south railway connecting Melbourne, Sydney and Brisbane is a standard gauge line to Acacia Ridge, generally single track and mainly to the east of the Great Dividing Range, although affected by its off-shoots. Investment in the line between Brisbane and Sydney has not been substantial over many decades, so the line is only of a standard commensurate with its demand.

At the present time, no other rail line connects Brisbane with Sydney.

✦ Road network

The Pacific Highway is a four-lane motorway where it crosses the Queensland and New South Wales border. It continues as a motorway standard as far as Byron Bay and is progressively being upgraded to this standard as far as Ballina. This reinforces the highway's role as servicing northern New South Wales supply chains. With the recent construction of the Pacific Motorway to six lanes between Nerang and Mudgeeraba, the available road reserve has been consumed. No further reserve is available for future expansion.

⁶³ Source: Table 8.2 Connecting SEQ2031. Alternatively it could be relegated to Level 2 priority.

⁶⁴ Source: Draft IMEX report for Port of Brisbane, 25 January 2013

The Cunningham Highway and New England Highways are two-lane roads, except through rural towns and when crossing ranges. Challenges for these roads were stated in sub-section 7.4.4.

A key risk is the Cunningham's Highway traversing of the range through Cunningham's Gap. This is periodically affected by landslips during rain events. For many months during 2011, the range crossing was reduced from four lanes to a single lane, serving traffic in both directions.

The interstate corridor is also serviced by a dispersed network of local government roads. Outside towns and communities, many locally controlled roads are unsealed.

➔ 7.7.2 Challenges

✦ Rail

The Sydney-Brisbane interstate rail line has not been developed for moving bulk freight as demand for this freight category does not currently exist.

The line is also impacted by passenger train priorities at both capital cities. Investment in the line between Brisbane and Sydney has not been substantial over many decades. Both will only change with a change in government policy, as the level and type of freight carried does not generate sufficient revenue to fund the investment to maintain or even improve this interstate line's competitiveness.

In contrast, continuing investment in the Pacific Highway has been committed by the Australian Government and New South Wales Government. The improved travel times, reliability and safety conferred on it makes both the interstate rail line and the New England Highway less attractive for current, or any forecast growth in, interstate freight traffic.

The Australian Rail Track Corporation (ARTC) is proposing a Melbourne-Brisbane rail link, as outlined in section 7.4. The planning and funding obstacles are also stated in that section.

✦ Road

The major asset risks for the non-coastal Gore/Warrego and New England Highways servicing interstate freight relate to their crossings of the Great Dividing Range at Toowoomba and Cunningham's Gap.

The Queensland Government has designated the Toowoomba Range Western Freight Corridor as one of the six Critical Priority Routes. As a result, it will likely be upgraded before Cunningham's Gap. This will result in the Brisbane-Toowoomba-Goondiwindi route becoming more competitive than the Brisbane-Warwick-Goondiwindi route. While this should mean a reduction in Brisbane to Warwick truck traffic, it also reduces the benefits for a bypass of Warwick.

The Gore Highway connection to the Newell Highway at Goondiwindi is susceptible to flooding, as are the interstate highway elements between the Great Dividing Range and Brisbane. The Pacific Highway can also be susceptible to flooding.

Nevertheless, all these roads currently perform at a reasonable standard commensurate with their freight demand.

The continuing population growth of the Gold Coast and northern New South Wales urban areas will lead to increased traffic and consume its capacity. This generates two further risks, being:

- communities adjacent to the Pacific Highway will become less accepting of the impacts of all traffic, particularly heavy traffic
- the available highway capacity will be consumed and there is no further road reserve between Nerang and Mudgeeraba for capacity enhancement.

Finding another road alignment in proximity to Gold Coast City is inhibited by urban encroachment and mountainous terrain.

➔ 7.7.3 Opportunities and priorities

✦ Rail

Both the Sydney-Brisbane and Melbourne-Brisbane rail links will only eventuate with a change in government policies relating to passenger train priorities and investment funding. Without such a change, opportunities for even maintaining the contestability of rail freight will not eventuate.

However, governments can only change policy when presented with the information on which to base decisions. Queensland does not have a strategic freight model, and as previously stated, it needs one. Such a model would provide government with multi-modal planning information on which to base policy changes. This report has also presented a policy mechanism to better balance freight and passenger train priorities to maximise utilisation and efficiency of the rail network.

For the Melbourne-Brisbane rail planning, the ARTC and Queensland Government planning needs to be aligned, as suggested in sub-section 7.4.

✦ Road network

The highest priority for interstate road connections is delivering the Queensland Government's Toowoomba Range Western Freight Corridor, nominated as one of its six Critical Priority Routes. This will remove the landslip risk of the current alignment, as well as improving efficiencies in the Brisbane, western New South Wales, Surat Basin and north-west Queensland supply chains.

The QTLC supports the Queensland Government's efforts to secure the necessary funding to deliver the Toowoomba Range Western Freight Corridor.

The inability of the Pacific Highway through the Gold Coast to be enhanced is an important issue, particularly as no future corridor has been planned due to its challenging nature.

History shows that identifying, planning, preserving and developing a new interstate highway standard road connection will take at least a decade. (The first commission to identify the alignment for the Toowoomba Range Western Freight Corridor occurred in 1994.)

The Mount Lindsay Highway and Summerland Way two-lane roads provide an opportunity for a more direct north-south freight route between Grafton and Brisbane. This route would be shorter than the current Pacific Highway route, which runs south-east until near Byron Bay, and then from Ballina to Grafton travels south-west. The major issue is crossing the Border Range, as the interstate rail line has done.

It could be called the Border Range Freight Corridor (BRFC).

Once developed, all heavy vehicles between Grafton and Brisbane would be expected to use it, which would limit their impact on the coastal cities. The route may also be more attractive than a congested Pacific Highway for passenger travel. For example, it would provide a direct route for day-trippers and drive tourists.

As such, the BRFC would create new regional development opportunities in this corridor.

For these reasons, it is imperative that the BRFC be conceptually planned and its future role and function preserved by planning scheme powers, including limiting future direct property access.

RECOMMENDATION

52. The Queensland and New South Wales Governments jointly plan a Border Range Freight Corridor and ensure that it is protected in government strategies and planning schemes, so that the northern New South Wales region can be developed and the reliability of interstate long-haul road transport is guaranteed.



8.0 THE WAY FORWARD

This report recommends 52 priorities to improve the development and sustainability of efficient and productive supply chains in Queensland.

Rather than adopt a modal or network approach, this report reflects the importance of ensuring freight moves efficiently throughout entire supply chains.

While the physical freight network is critical to achieving this objective, productivity benefits flowing from investment in freight infrastructure is dependent on optimising the broader freight system, including where freight enters and exits the physical network.

The recommendations identified in this report seek to optimise the broader freight system through a combination of non-infrastructure and low-cost infrastructure measures aimed at unlocking latent efficiency and capacity through:

- improved freight data management
- integrated land use and freight planning
- innovative freight infrastructure investment methodologies
- regulatory and policy reform
- understanding and responding to regional freight flows and demand.

The QTLC will present this report to governments for their consideration and action and will review progress made during the 2013-2015 period.

Delivering the outcomes underpinning the recommendations in this report must be a joint effort between state and local governments, key economic generators and the freight transport and logistics sector.

The QTLC looks forward to working with these stakeholders to strengthen Queensland's supply chains for the long term economic and social benefit of all Queenslanders.

REFERENCES

This document does not deal with all the available literature; it is salutary to canvass the hundreds of reports produced by the National Transport Commission (NTC) alone over the last two decades. Rather, a snapshot of the most influential of the recent reports and data sources are referenced.

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