



Final Report of the Freight Logistics Coordination Team

December 2013

MESSAGE FROM THE CHAIR

The Freight Logistics Coordination Team's (FLCT) Terms of Reference require us to provide expert advice to the Tasmanian Government and the Australian Government on freight and supply chain issues, and to inform a long-term freight strategy for Tasmania. I am pleased to provide that advice in this final report.

The FLCT has examined the complex freight and supply chain issues in Tasmania in considerable detail. We worked closely with industry. We focused on establishing the evidence base and much of the material produced by the FLCT is now available for the first time.

The Tasmanian Freight Strategy is urgently needed. The FLCT recognised this by bringing forward our final report from May 2014 to December 2013.

Our report raises issues for both the Australian and Tasmanian Governments.

For the Australian Government, the costs and complexity of Bass Strait shipping pose difficult and challenging issues. Bass Strait is a key part of the supply chains of most Tasmanian businesses, and the sole transport option for most. Shipping service models and the equity of existing subsidy arrangements are factors that require further detailed investigation. In this context, we welcome the recent commencement of a review into Tasmanian shipping and freight by the Productivity Commission, assisted by the Australian Competition and Consumer Commission. The body of work done by the FLCT and the conclusions reached by the FLCT are important inputs to that review.

We also welcome the Prime Minister's announcement of a future review of Australia's coastal shipping arrangements. The current arrangements restrict the ability of international vessels to carry domestic cargo within Australian waters. This has had a significant impact on choice for Tasmanian shippers.

The Tasmanian Government plays a unique role in Tasmania's freight system. Tasmania is the only Australian state where the government still owns all major freight infrastructure (ports, road and rail), and also operates rail freight and freight shipping services. It also sets policy direction.

This raises a number of challenges and opportunities -

- Providing certainty on Tasmanian port strategy;
- Funding Tasmania's freight infrastructure in circumstances where the ability of the Government to do so is constrained;
- Planning and funding parallel road and rail freight networks; and
- Dealing with market competition issues as the owner of one of the three principal Bass Strait shipping companies.

My FLCT colleagues and I sincerely hope that the work we have done will provide both Governments with better information to make the important decisions required.

The issues under review by the FLCT are critical issues for the Tasmanian economy and for all Tasmanians. There has been high level of public interest in our work. Unfortunately, the broader debate has often focused on short term solutions rather than long term sustainable outcomes and on solutions that address one part of the system. There is no doubt in my mind that this misdirected focus has adversely impacted on Tasmania's ability to effectively and decisively address its freight issues.

I have been particularly pleased that FLCT members have remained objective throughout this process, putting the interests of Tasmania above the interests of any particular group. I am entirely satisfied with the independence of our work.

My colleagues on the FLCT have been great to work with. Their depth of knowledge of the issues at hand is immense. All are busy people in senior positions and have given very generously of their time without any compensation. My particular thanks go to the Chairs of our Sub-groups - Saty Warty, Ian Newman and Damien White. They did a lot of the heavy lifting.

Finally, I would like to thank the Department of Infrastructure, Energy and Resources, for their support and commitment to the work completed by the FLCT - Gary Swain, who provided leadership; Di Gee and Sophie Reid, who have done a wonderful job providing a most efficient secretariat; Norm McIlpatrick who provided wise counsel.

I am honoured to have chaired this group.

A handwritten signature in blue ink, reading "P. Marcus Clark". The signature is fluid and cursive, with the first name "P." and last name "Clark" clearly visible.

Philip Marcus Clark AM

Chair, Freight Logistics Coordination Team

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EXECUTIVE SUMMARY

The Freight Logistics Coordination Team's (FLCT) has been tasked with examining freight and supply chain issues in Tasmania. It has undertaken this with a focus on improving Tasmanian business productivity, competitiveness and growth. The FLCT has examined the freight infrastructure and underlying supply chains that support user needs.

The key observations and final recommendations of the FLCT are provided below.

A. Key Observations of the FLCT

The FLCT's recommendations reflect the following observations -

1. Planning and policy measures to support productivity and growth

- Decisions on ports must lead road and rail freight planning and investment.
- Decisions made by the Port of Melbourne affect Tasmanian shippers.
- Parallel road and rail freight networks are an unavoidable part of Tasmania's freight system, but there must be clear objectives to guide planning and investment.
- Tasmania needs a single, high standard freight corridor, supported by key regional connections.
- The future role of rail needs to be clearly articulated.
- Government plays a significant role in Tasmania's freight system, owning all major freight infrastructure and operating rail and freight shipping services. It also sets the policy direction and is well-placed to positively influence outcomes.

2. Market involvement in future planning and investment frameworks, and service provision

- Bass Strait shipping is a key part of the supply chains of most Tasmanian businesses. It operates as a complex and imperfect market.
- To an extent, Bass Strait trade is an expensive trade to serve.
- Bass Strait is proportionally the single largest transport cost in the supply chain of a typical Tasmanian business. The Tasmanian Freight Equalisation Scheme (TFES) is critical to reducing costs.
- Bass Strait shipping services are undifferentiated in terms of service choice. The high frequency/high cost service structure exceeds the needs of some shippers.
- Shippers experience peak season capacity issues. There are a range of options to address both current and future capacity needs.
- The viability of a commercially sustainable direct international container shipping service must be determined by the market.
- Constrained infrastructure budgets are a national challenge. The potential for alternate government funding models and private sector investment needs to be examined.

3. Transparency and participation measures to promote innovation and competition

- Reducing the flow of empty containers offers cost saving opportunities to shippers and can positively impact Bass Strait shipping capacity. More detailed data on empty container movements is needed.
- Freight planning must be based on accurate data and information. An online, public access transport model for Tasmania could assist future planning for freight users, service and infrastructure providers.
- Underutilised capacity can increase costs for freight users. The viability of establishing a market based trading portal should be investigated.
- Improved knowledge sharing across businesses can support innovation and skill development.

4. Supporting small to medium freight users to improve supply chain efficiency

- Supply chains are complex. Expert advice can help Tasmania's small to medium freight users improve their supply chains.
- Greater aggregation of freight can drive better outcomes for business and infrastructure owners. A demand aggregation case study for agriculture should be developed as a template for other freight intensive sectors with predominantly small and diverse freight users.

5. Assisting international exporters to build and access markets

- Tasmanian international exporters are disadvantaged by existing Bass Strait subsidy arrangements.
- Immediate transitional assistance is needed to address the freight challenges facing Tasmania's international exporters.
- Tasmanian businesses rely on coastal shipping. National policies that support greater service choice for shippers are important.

B. Recommendations of the FLCT

The final recommendations of the FLCT are -

Planning and policy measures to support productivity and growth

1. The Tasmanian Government should complete a Tasmanian Freight Strategy by 30 June 2014.
2. The Tasmanian Government should adopt the FLCT's objective for the Tasmanian freight system as the objective for the Tasmanian Freight Strategy.
3. The Tasmanian Government should establish an on-going high level, public-private freight advisory group.
4. All funding remaining from the \$1.5 million provided by the Australian Government for the FLCT's work should be allocated to preparation of the Tasmanian Freight Strategy and the operation of the freight advisory group.
5. Port development is critical for Tasmania and should be progressed on the following basis -
 - a Formalise a long-term port strategy that recognises Burnie Port as Tasmania's principal domestic container port in the medium to long term, based on potential for deep water expansion, closest sea travel time to Melbourne, the ability to develop at comparatively lower cost and alignment with land transport networks.
 - b Ensure investment in other ports is targeted to meet specific freight needs, with no investment in duplicated functions.
 - c Formalise an involvement by the Tasmanian Government with the Victorian Government in Port Planning that recognises Tasmania is a significant customer of the Port of Melbourne.
6. The role of rail in the Tasmanian transport system should be clearly articulated by Government and aim to -
 - a Ensure that above rail operations operate on a commercial basis within five years, where revenue from freight is sufficient to cover operating costs and to provide for future investment in above rail assets.
 - b Ensure that public investment in below rail assets is based on defined network standards linked to freight demand.
 - c Be consistent with a long-term port strategy and consider the long-run adequacy of rail access to Tasmanian ports.

7. Road investment in Tasmania should target one high standard freight corridor, supported by key regional connections and -
 - a Prioritise road expenditure to the Burnie-Devonport to Hobart primary freight corridor, which is part of the National Freight Network, developing this corridor as Tasmania's highest standard freight route.
 - b Ensure that investment outside this corridor prioritises key regional freight roads that connect to the primary freight corridor. This includes the Bass Highway west of Burnie, East Tamar Highway and Frankford-Birrreele-Batman corridor.
 - c Inform the development of a high-productivity vehicle access policy by the Tasmanian Government.
8. The best use of resources across Tasmania's infrastructure system needs to be strategically managed. The Tasmanian Government should -
 - a Work with TasRail and the road authorities to establish the contestability of freight growth across road and rail, focusing on the Burnie-Devonport to Hobart corridor.
 - b Directly assess which modal combination is best suited to carry major freight tasks, considering both business and broader system benefits.
 - c Assess infrastructure funding across road, rail and ports to ensure funding is directed to those parts of the system that deliver the best outcomes for business and the community.
9. The future lease or sale of some or all Tasmanian Government-owned assets to the private sector warrants future consideration, particularly where there is a strong relationship between the use of those assets and specific businesses.
10. Infrastructure planning processes across all levels of government must be clear and transparent, with defined objectives, timeframes and opportunities for industry and community involvement.
11. One planning zone and one uniform assessment process should be applied to major transport infrastructure corridors and nodes.

Market involvement in future planning and investment frameworks, and service provision

12. In the context of the current Productivity Commission-ACCC Inquiry into Tasmanian shipping, the FLCT -
 - a Recommends that the Tasmanian Government highlights the critical importance of the TFES to Tasmanian businesses and supports the case for maintenance of at least existing funding levels; and
 - b Seeks extension of the TFES to Tasmanian international exports.
13. The demand for different Bass Strait shipping service models, including a lower frequency option, should be investigated. This will require the collection of better data on service needs.
14. Bass Strait seasonal capacity issues should be examined in the context of forecast growth, user needs, alternative lower cost solutions and their relationship to broader port planning.
15. The Tasmanian Government, with customer support, should continue to market-test the commercial interest of international shipping providers to supplying direct bulk and container services to and from Asia and should continue to negotiate with shortlisted providers.
16. The Tasmanian Government should examine the potential for alternate transport infrastructure funding models, including -
 - a Targeted divestment of non-core assets and the recycling of equity within the government business portfolio; and
 - b Private sector investment in freight infrastructure and private sector contributions as part of specific freight-related developments.

Transparency and participation measures to promote innovation and competition

17. The Tasmanian Government should develop a publicly accessible online freight model to understand the impact of future changes in the freight system, to inform decision-making and to establish a common information base across government and industry.
18. As part of the development of the Tasmanian Freight Strategy, further work should be undertaken to reduce empty container movements by -
 - a Working with TasPorts and shipping lines to collect more detailed data on empty container movements;
 - b Assisting businesses to use alternative packaging, including slip sheets, for containerised freight; and
 - c Advocating for a change to domestic pallet with in relevant national transport forums.

19. As part of the development of the Tasmanian Freight Strategy, further work should be done to investigate the extent and nature of air freight needs, with a view to identifying opportunities to better integrate air transport into Tasmania's strategic freight system.
20. As part of the development of the Tasmanian Freight Strategy, the Tasmanian Government should test the viability of a market-based trading portal that facilitates voluntary trade of under-utilised freight capacity to reduce the risks and costs facing freight customers.
21. As part of the development of the Tasmanian Freight Strategy, the Tasmanian Government should investigate opportunities to promote industry collaboration, enhanced skills training and employment opportunities in the freight, transport and logistics sectors.

Support for small to medium freight users to improve supply chain efficiency

22. The FLCT supports funding of \$2.5 million over two years to establish an expert advisory panel to assist small to medium freight users to optimise their supply chains and reduce costs.
23. The FLCT recommends the development, by the expert advisory freight panel, of a demand aggregation case study to investigate how and under what circumstances industry collaboration can lead to greater aggregation of freight volumes in the agriculture sector. Consideration should also be given to whether that can be used as a template for other freight-intensive sectors with predominantly small and diverse freight users.

Assisting international exporters to build and access markets

24. The FLCT recommends that the TFES be extended to international exports from Tasmania.
25. The FLCT calls on the Australian Government and the Tasmanian Government to re-affirm the joint commitment they made in August 2013 to provide \$40 million transitional funding to Tasmanian exporters and to proceed as quickly as possible to begin to allocate that funding.
26. The FLCT recommends that the Tasmanian Government lobbies for changes to the coastal shipping arrangements, to provide greater service choice for Tasmanian business by removing all restrictions on the ability of international vessels to carry domestic cargo within Australian waters.

I. THE FREIGHT LOGISTICS COORDINATION TEAM

I.1 Introduction

The FLCT was established in November 2012 to provide expert advice and guide the completion of a long-term freight strategy in Tasmania, and to provide recommendations to the Minister for Infrastructure on Tasmanian supply chain issues. The FLCT is supported by funding of \$1.5 million from the Australian Government.

The importance of the FLCT's work has been apparent to all. Businesses in Tasmania are facing significant challenges, and the advice of the FLCT is a key part in addressing these challenges.

The FLCT is an independent expert advisory body, comprised of 19 senior representatives from across major shippers and producers, infrastructure providers, freight logistics companies and peak industry bodies (see below).

Members of the Freight Logistics Coordination Team

Mr Neil Armstrong	Managing Director, Harvest Moon
Mr Michael Bailey	Chief Executive Officer, Tasmanian Chamber of Commerce and Industry
Mr Philip Marcus Clark AM	Chair, Tasmanian Infrastructure Advisory Council
Mr Phil Cooke	General Manager Infrastructure and Maintenance, TasPorts
Ms Jan Davis	Chief Executive Officer, Tasmanian Farmers and Grazier's Association
Mr Craig Fraser	Senior Consultant Resource Recovery, Veolia Environmental Services
Mr Steve Henty	Finance and Administration Manager, Net Sea Freight Tasmania Pty Ltd
Mr Tim Hess	General Manager Marketing and Logistics, Petuna Group
Mr Chas Kelly	Chairman, SeaRoad Holdings Pty Ltd
Mr Gary McCarthy	Business Development Manager, Port of Melbourne Corporation
Mr Ray Mostogl	General Manager Operations, Bell Bay Aluminium
Mr Ian Newman	Independent Transport Consultant
Mr Robin Philips	Executive Director, Tasmanian Transport Association (TTA)
Mr Tony Stewart	Divisional General Manager, Toll Tasmania
Mr Gary Swain	Deputy Secretary, Strategy and Policy, Department of Infrastructure, Energy and Resources
Mr Leigh Titmus	Managing Director, Webster Limited
Mr Satyajit Warty	Freight Manager ANZ (Supply Chain – Logistics), Cadbury Schweppes Pty Ltd/Kraft Foods Australia
Mr Damien White	Chief Executive Officer, TasRail
Mr Arnold Willems	Supply and Logistics Manager, Norske Skog

The FLCT brings with it major freight and logistics expertise, industry relationships and knowledge. FLCT discussions and member input has been constructive, detailed and forward-looking, significantly informing the substantive issues with which it was tasked with responding.

The FLCT has focused on outcomes that will deliver improved freight efficiency for Tasmanian businesses, make Tasmanian businesses more productive and competitive, and support business growth. It has also examined the efficiency and cost of supporting freight infrastructure.

The FLCT has determined that recommendations must be based on a strong evidence base and hypotheses which have been rigorously tested. Implicit in the work of the FLCT has been a need to improve the quality of information on freight issues in Tasmania to support more informed debate and responses.

The FLCT supports the following objective for Tasmania's freight system and recommends that the objective be adopted by the Tasmanian Government -

The Tasmanian freight system should -

1. Provide services that are commercially sustainable, and which deliver competitive and sustainable prices to users over the long-term;
2. Reflect the current and future needs of customers, and the broader community;
3. Maximise supply chain efficiency and quality, with a continued focus on productivity improvement;
4. Be safe, reliable and secure; and
5. Operate within an efficient and certain regulatory environment.

1.2 Terms of Reference and scope

The FLCT's Terms of Reference are included at Appendix I.

The FLCT's discussion and analysis has not extended to all parts of Tasmania's freight system. The focus of the FLCT's work has been on intermodal supply chains and it has not investigated Tasmania's bulk freight market in detail. The FLCT has also not looked at air freight in detail, or transport to the Bass Strait Islands. The FLCT understands that the Tasmanian Government is currently working with King Island and Flinders Island on freight issues, and has not sought to duplicate this work. All of these areas should be further investigated as part of the development of a Tasmanian Freight Strategy.

1.3 Approach to the task

The FLCT has undertaken a significant amount of work, delivered through a defined work program and a clear, evidence-based approach. The FLCT's work program is shown in Appendix 2.

The FLCT has maintained a consistent schedule of meetings and key milestones, which has included six full Team meetings, sub-group meetings, and informal, ongoing input to its supporting consultancy work.

Sub-groups were established to focus on specific areas of the FLCT's analysis -

Sub-group 1. Freight System Analysis

- Analyse current and future freight volumes, including freight projections by sector. Understand the impact of current and future infrastructure and services on business.

Sub-group 2. Supply Chain Quality, Cost and Benchmarking

- Examine supply chains across sectors, including their operation, cost and quality. Benchmark supply chain costs against other jurisdictions.

Sub-group 3. On-Island Freight Issues

- Analyse infrastructure demand, capacity, constraints, future planning and investment across ports, road and rail in Tasmania.

1.3.1 Developing an evidence base - consultation and targeted consultancies

Establishing the evidence base and engaging directly with industry are key elements underpinning the approach of the FLCT. This approach is critical to understanding -

- How Tasmania's freight and logistics system operates;
- What the major issues are, who is impacted and how;
- Major impediments to change; and
- Areas for improvement and reform, including clear identification of the benefits flowing to business and the community as a result of any changes.

Reflecting this approach, the FLCT's work program has focused on -

- Analysis and benchmarking of Tasmania's supply chains, across commodities and economic regions, and including cost, quality and efficiency;
- Examination of the issues associated with shipping across Bass Strait, for both domestic and international exports;
- Future economic modelling to understand likely changes in the freight task as a result of different policy interventions and economic scenarios;
- Analysis of the flow of empty containers into and out of Tasmania; and
- Industry engagement on issues and opportunities.

1.3.2 Interim reports

In August the FLCT released the *Chair's Interim Findings*, outlining the interim observations and directions of the FLCT. Support for an international exporters' assistance package was a key part of this report.

In early October, the FLCT sought public feedback on its work and draft recommendations via a public *Discussion Paper*. Fourteen submissions were received. The FLCT has responded to some of the comments received within this final report.

The FLCT wishes to thank all those who made a submission. Copies of all submissions, which are being released, are available at: www.transport.tas.gov.au/road/freight_logistics

1.3.3 Supporting consultancies

The FLCT has sought independent advice and analysis on key policy, supply chain and operational issues affecting Tasmania's freight system. Over 150 stakeholders were consulted in the course of this work, much of which is new for Tasmania.

The consultancies undertaken were -

- Juturna: *Tasmanian freight infrastructure systems*
- Aurecon: *Supply chains in Tasmania, Tasmanian shipping and ports, Empty container movements*
- GPS Logistics: *International container shipping service viability*
- Thompson Clarke Shipping: *Market testing of an international container shipping service to Tasmania (commercial-in-confidence)*

The advice received from each of these consultancies has significantly informed the directions and deliberations of the FLCT.

The FLCT would like to thank all consultants for their work and contribution. We would also like to thank those stakeholders who provided their time, information and expertise to inform this work.

A summary of consultancies is provided in the *Chair's Interim Findings* and the FLCT public *Discussion Paper*. Both these reports, together with those final consultant reports which are being released, are available at: www.transport.tas.gov.au/road/freight_logistics

2. TASMANIA'S FREIGHT SYSTEM

The key information relating to Tasmania's freight system is outlined below.

Freight task and demand	• The FLCT has adopted a Gross State Product (GSP) growth rate of 1.7% (compared to a national average of 2.4%), and a range of sector-based rates, where agriculture is the highest at 4%. • In 2011/12, Tasmania's total land freight task was 23 million tonnes. • Key commodities by volume were agriculture (25%), forestry (25%), construction materials (13%), consumer goods (12%), and mining (10%). • Freight movements into and out of TasPorts operated ports totalled 11.3 million tonnes and included the movement of 457,000 twenty-foot equivalent units (TEUs). • By volume, bulk freight is around 62% and non-bulk 38% of sea freight. • The majority of Tasmania's land freight task is moved on road (82% tonne kilometres) with the remainder on rail (18% tonne kilometres). • Each of Tasmania's three major regions is a significant origin and destination for freight. In terms of freight origins, 39% of freight comes out of the North West, 37% from the North East and 24% from the South. • A small number of large freight users account for a high proportion of Tasmania's exports by both TEU and total volume. For example, one third of exports by TEU are moved by five companies.
Bass Strait shipping	• 88% of container movements out of Tasmania are destined for domestic markets. 12% is direct transhipment to international markets. • Container freight services are provided by Toll (market share around 54%), SeaRoad Shipping (market share around 25%) and TT-Line (market share around 21%), which is owned by the Tasmanian Government. • The top four outbound container commodities are empty containers (33%), agriculture (22%), retail (20%; <i>note this includes manufactured goods such as confectionery and beer</i>) and industrial products (14%). • The top three inbound container commodities are retail (54%), empty containers (21%), and industrial products (12%). • Each ship operator provides an overnight service, six days per week, using two ships to provide a northbound and southbound service. • Outbound container freight peaks between February and May, reflecting the large volumes of agricultural products. Inbound container freight peaks in October, driven by an influx of retail goods for Christmas; and March to May, related to an inflow of empty containers for agricultural export. • Each ship operator is planning future investment in vessels to extend capacity.

Ports	• Tasmania is trade reliant. With 99% of goods moving into and out of the state by sea, ports are critical. • Burnie and Devonport are the main container ports, moving 253,833 and 196,127 TEU in 2012/13, respectively. There are no container movements out of Hobart and a very limited service out of Bell Bay. • Bulk freight is shipped from Bell Bay, Devonport and Burnie. • The privately owned Port Latta moves around 2.4 million tonnes of bulk material. • The majority of Tasmania's freight moves through the Port of Melbourne. • The Tasmanian Government owns all major ports.
Land transport network	• Tasmania's National Network carries 60% of the State's freight task in net tonne kilometres. • The Tasmanian Government owns the major State Road network, and is the owner and operator of the State Rail network. • The Burnie-Devonport to Hobart freight corridor carries the highest freight volumes, reflecting its linkages to major ports, population centres and industrial and processing areas in Burnie, Devonport, Launceston and Hobart. • Key regional freight roads include the Bass Highway (west of Burnie to Smithton), East Tamar Highway, and the Frankford-Birrlee-Batman corridor. • Generally, capacity across the road and rail network is sufficient, and this is a benefit to users.
Long term planning and freight funding	• Ports are the key to effective, long-term freight planning for Tasmania. • Scale and volume are key components in the planning and delivery of efficient freight infrastructure and services. • Tasmania's freight infrastructure is largely publicly owned. The ability of government to fund freight infrastructure is constrained. • Options beyond the status quo need to be considered; e.g. road and rail to three ports at a similar infrastructure standard, targeting a relatively low level of differentiation, and at low volumes, is not sustainable for Tasmania. • Information and data are critical. Effective responses must be based on evidence.

3. RECOMMENDATIONS AND OBSERVATIONS

3.1 Introduction

The FLCT has amassed a considerable evidence base over the past year. It has also drawn on its own industry experience, observations and the input of other stakeholders.

The final recommendations of the FLCT reflect its Terms of Reference, which requires a focus on supporting business productivity and growth.

Consistent with the finding that many issues are impacting on Tasmania's freight system, the recommendations represent a package of linked initiatives to address the key freight issues facing Tasmania.

The FLCT's final recommendations and observations are provided in five sections -

1. *Planning and policy measures to support productivity and growth;*
2. *Market involvement in future planning and investment frameworks, and service provision;*
3. *Transparency and participation measures to promote innovation and competition;*
4. *Supporting small to medium freight users to improve supply chain efficiency; and*
5. *Assisting international exporters to build and access markets.*

These sections do not attempt to summarise or duplicate the material reported in and which supported the *Chair's Interim Findings* or the FLCT's public *Discussion Paper*. All of this material is available at: www.transport.tas.gov.au/road/freight_logistics

Detailed recommendations are provided in the Executive Summary.

3.2 Planning and policy measures to support productivity and growth

3.2.1 Decisions on ports must lead road and rail freight planning and investment

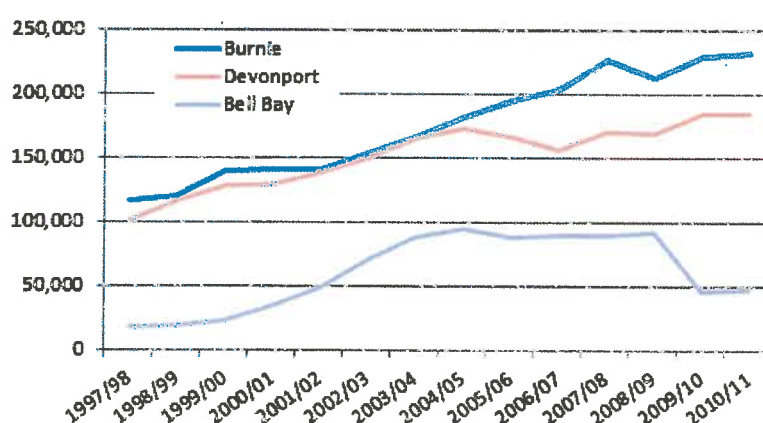
Over 99% of goods leaving Tasmania are moved by sea, making ports a central point for the exchange of goods and the focus for land freight transport connections.

Tasmania has four major ports at Burnie, Devonport, Bell Bay and Hobart. Historically, all have developed to fulfill a regional function. In its ten year infrastructure plan, TasPorts estimates future capital and maintenance costs across these ports at \$300 million, covering both infrastructure maintenance and fleet replacement. Annual port maintenance and renewal costs increased from \$4 million to around \$10 million between 2007 and 2011.

Over the past decade, freight activity has shifted to the northern ports (see Figure 1). Volumes are highest at Burnie and Devonport, with most containers moving through these two ports. Factors behind this shift include -

- Shipping service options. Three operators provide high frequency services out of Burnie and Devonport, including TT-Line's passenger ferries whose services are particularly suited to the movement of time sensitive freight.
- Changing freight demand. Container-based and just-in-time freight (e.g. agriculture) is focused in the north-west. Agricultural produce from the north-east travels to the north-west for processing. The majority of retail freight is destined for Launceston and Hobart.
- Market decisions, including a joint venture between Toll and ANL to provide domestic services out of Burnie only, and the freight contracts and decisions of individual freight users.
- Long-term legacy tenancy arrangements have incentivised individual domestic shipping lines to operate out of Burnie and Devonport ports.
- Burnie and Devonport ports are a shorter sailing time to the Port of Melbourne and have no tidal constraints.

Figure 1 Container port throughput, northern ports



Source: TasPorts

Despite the amalgamation of port authorities into TasPorts in 2006, regional considerations continue to influence port planning. Tasmania does not have a long term port strategy. The FLCT understands TasPorts will release a port strategy in the first half of 2014, and welcomes this initiative. However, given the significance of ports to Tasmania's freight system, the FLCT has determined it must have a view on future port arrangements as part of its final advice to government.

The FLCT has identified Burnie Port as the logical location for a principal domestic container port over the medium to long term. This is based on potential for deep water expansion, ability to develop at comparatively lower cost and alignment with land transport networks.

\$8 million is currently being invested at Burnie Port to improve container capacity and efficiency, and improve the efficiency of rail. It is the FLCT's understanding that Burnie Port can cater for up to 750,000 TEU over the long term, based on staged and incremental upgrades. At a container growth rate of 3%, this would meet demand for the next 30 years.

Any principal container port must be supported by arrangements that maximise competition and commercial outcomes (for example, the development of common user facilities, and market-based tenancy arrangements). Investment in other ports should target specific rather than general freight demand, with minimal investment in duplicated functions. Future investment in support of Tasmania's domestic container task should be at Burnie.

Devonport and Bell Bay ports currently meet specific needs around containers, passengers and bulk cement (Devonport), and forestry, fuel and manufacturing (Bell Bay). At both ports, there is a strong relationship between the port and adjacent businesses. The FLCT notes the views of some that the lease or sale of all or some of these assets to the private sector, including those businesses most benefiting from the port, may warrant future consideration if TasPorts' returns and/or asset sale expectations make this credible.

In forming its position on a principal domestic container port, the FLCT recognises that there are different views on this issue, including within the FLCT. Equally, it recognises that providing certainty on port development is critical for Tasmania, and is overdue.

3.2.2 Decisions made by the Port of Melbourne affect Tasmanian shippers

The Port of Melbourne is Tasmania's primary export and import destination for containers. While transshipment results in higher costs for international exporters and importers, the port also provides significant choice in international shipping lines.

Future decisions by the Victorian Government relating to the port can affect freight costs for Tasmanian businesses and the operations of Bass Strait shipping lines.

In 2012, the Victorian Government imposed a \$75 million Port Licence Fee on the Port of Melbourne. This cost has been passed on to customers. The Tasmanian Government has been successful in securing lower charges than originally proposed for a number of port services to the benefit of Tasmanian shippers, however freight costs still remain higher.

The Victorian Government plans to develop a second container port at Hastings, east of Melbourne. A development authority has been established to progress the initiative, and significant funds committed to the planning and approvals stage.

The FLCT recommends that the Tasmanian Government establishes formal involvement with the Victorian Government in port planning, recognising the importance of current and future port infrastructure and operations in Melbourne to Tasmania.

3.2.3 Parallel road and rail freight networks are an unavoidable part of Tasmania's freight system, but there must be clear objectives to guide planning and investment

Tasmania's infrastructure networks are extensive, in part duplicated, and most are ageing. Juturna observed that the cost of maintaining this infrastructure, much of which is substitutable, is high for Tasmania, and that overall system efficiency is impacted.

The majority of Tasmania's freight task is carried on road. Total and proportional freight volumes on rail are low, but vary across lines.

Tasmania has a parallel road and rail connection between Burnie and Hobart, partially to Devonport Port (western side) and to Bell Bay. It also has parallel networks, where rail serves a specific freight task, on the West Coast and to Fingal.

Infrastructure Australia (IA) has previously sought clarification on the Tasmanian Government's objectives for its parallel road and rail networks, particularly between Burnie and Hobart. In its most recent report to the Council of Australian Governments (COAG), IA notes the need for a strategy along this corridor that 'considers the roles of rail and road in respect of freight using an integrated approach to identify the best solutions.'

Rail volumes between Burnie and Hobart are currently low, and focused on a small number of higher volume users. This corridor must be a focus for the future evaluation of returns on investment in rail, and it must consider contestability on this corridor, together with the outcomes gained from adjacent road investment.

Decisions on how road and rail should develop or interact affect investment and funding. Road is the preferred mode for freight transport in Tasmania, where movements are generally over short distances. Road is also the preferred mode for time-critical freight. Point to point bulk freight movements for which rail has an advantage are limited in Tasmania. Currently, even bulk rail lines are carrying low volumes compared to the road network, although the FLCT notes that a number of major mining developments could see these proportions change. The existence of an efficient rail connection to a port was a key factor in a recent mine development.

At the national level, road transport is moving toward even higher productivity vehicles that will require major road upgrades over the long term. If this occurs in Tasmania, it is difficult to see how rail will compete outside niche markets or customers. Road freight operates under a system of user pays, and contributions are regularly reviewed at a national level.

The FLCT recommends that the Tasmanian Government work with TasRail and the roads authorities to establish the contestability of freight growth across road and rail, focusing on the Burnie-Devonport to Hobart corridor.

For major projects, the Tasmanian Government should directly assess which modal combination is best suited to carry a freight task, considering business needs, user pays contribution levels and broader system benefits.

3.2.4 Tasmania needs a single, high, standard freight corridor, supported by key regional connections

The Burnie-Devonport to Hobart freight corridor is Tasmania's highest volume freight corridor, connecting major ports at Burnie and Devonport, with population centres and industrial centres. Over two thirds of freight is carried on the corridor, and it is Tasmania's key corridor for the movement of containerised freight.

The corridor connects two major intermodal investments – the Brighton Hub in the south and the Burnie Port optimisation project in the north-west.

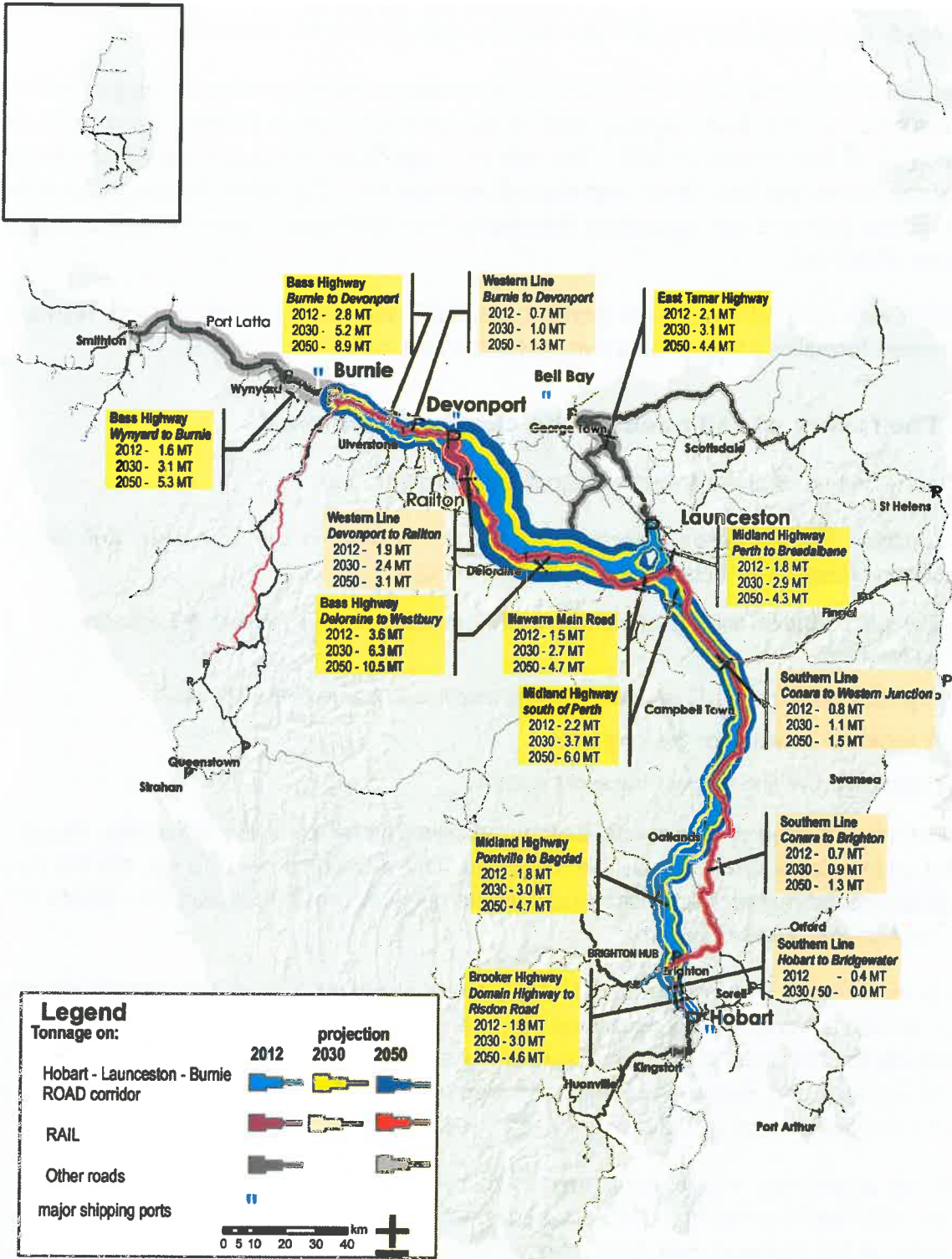
Figure 2 shows current and forecast freight volumes on this corridor over the long term.

Tasmania's 2012 submission to Nation Building 2 (NB2) (Appendix 3 provides an overview of the Program funding. The Program has been renamed the Infrastructure Investment Fund) identified a series of projects to address road and rail deficiencies on this corridor. The combined value of these projects was over \$500 million across the five year NB2 period.

The Burnie-Devonport to Hobart Freight Corridor has been identified as an early stage project on IA's Infrastructure Priority List for 2012-13.

Major regional road connections play a critical role in moving freight to and from this principal corridor. These roads include the Bass Highway west of Burnie, the East Tamar Highway, and the Frankford-Birralee-Batman corridor. Rail connects at Fingal and Bell Bay.

Figure 2 Current and forecast freight volumes, Tasmania



Source: DIER

The FLCT recommends major road freight investment is prioritised to the Burnie-Devonport to Hobart freight corridor, developing it as Tasmania's highest standard freight road. Regional freight roads that connect to this corridor are the next priority for investment.

Forecast volumes are highest on the road corridors west of Burnie and connecting to Bell Bay. The freight task on the Bass Highway west of Burnie is forecast to increase from 1.6 million tonnes to 3.1 million tonnes by 2030. This reflects a significant increase in agricultural freight. Freight volumes on the East Tamar Highway will increase from 2.1 million tonnes to 3.1 million tonnes. Forest products and agriculture (moving to the north-west region for processing) is a key driver of this task.

Consistent with its road investment strategy, the FLCT also recommends that the Tasmanian Government formalise a high-productivity vehicle access policy for Tasmania.

3.2.5 The future of rail needs to be clearly articulated

After a long period of under-investment, rail is playing catch-up.

The Tasmanian Government's objectives for rail are defined in the *Tasmanian Rail Network Objectives and Priorities for Action 2010-11 to 2013-14*, as -

- The safe operation and use of the rail network, including interaction with the broader community.
- A greater proportion of Tasmania's growing freight task is transported by rail.
- A viable rail network for the long term.
- A cost effective and efficient transport system.

The next step needed is to provide clear timeframes for when these objectives should be reached and to clarify how they will be measured. There is also a need to identify the target share of the freight market that could be carried on rail over time to support the viability of rail in the Tasmanian transport system.

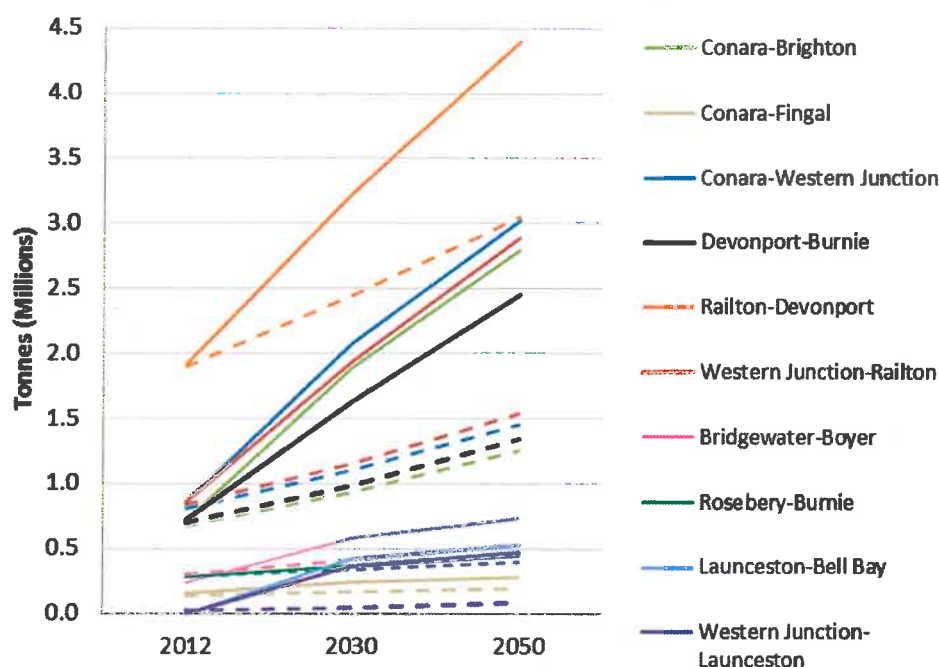
Rail's current market share of the land transport task is around 18% of net tonne kilometres. Its contribution is higher on individual lines (for example, the cement task between Railton and Devonport). For the intermodal task, volumes are still not at a level, where for example, if rail were to cease on the Burnie to Hobart corridor the impact on traffic volumes, future road upgrades or maintenance would be significant.

TasRail has proactively sought opportunities to carry new products (for example, logs), to integrate with road to provide a whole of supply chain response, and to integrate across products and modes at the Brighton Hub. It has also undertaken a major sleeper replacement program and replaced ageing locomotives, both of which will contribute to a significant improvement in reliability for customers.

A number of major mines are proposed for Tasmania, located largely in regional areas. These freight tasks may be best suited to rail.

TasRail undertook contestability analysis as part of NB2. This analysis shows potential freight growth for rail based on markets captured, across individual lines (see Figure 3).

Figure 3 Future rail task: Base case growth versus potential contestable market growth



Note: Dotted lines are base case projections, solid lines are the 'potential' freight projections.
Source: DIER/TasRail

Rail has required substantial public investment to get to this point, and more is required.

The FLCT considers that it is a legitimate objective for Tasmania's above rail operations to operate on a commercial basis within five years. This considers the end point of the current Infrastructure Investment Fund investment period. This means that revenue from freight users of the rail system is sufficient to cover operating costs and to provide for future investment in above rail assets. Public investment in below rail assets should be based on defined network standards, linked to freight demand.

3.2.6 Government plays a significant role in Tasmania's freight system, owning all major freight infrastructure and operating rail and freight shipping services. It also sets the policy direction and is well-placed to positively influence outcomes

A feature of Tasmania's freight system is the extent of government ownership of freight infrastructure, including ports, road and rail networks, in addition to the operation of rail and sea freight services. This level of government involvement is both an opportunity and a challenge.

Tasmanian Freight Strategy

One of the tasks of the FLCT has been to inform the development of a statewide freight strategy. The work of the FLCT has confirmed the importance of this strategy to the future planning of Tasmania's freight system. There is a need for clear direction on Tasmania's freight system, including in relation to priority freight infrastructure, objectives for parallel freight networks, funding alternatives and measures to improve the underlying evidence base. Any strategy must be built on a statewide view and be based on broad consensus across government and industry.

The FLCT recommends that a Tasmanian Freight Strategy be finalised by 30 June 2014. This strategy should be informed by the FLCT's final report.

Investment choices and opportunities

The Tasmanian Government owns and operates significant freight assets and services. The extent of government involvement is high compared to other jurisdictions, and this can be problematic in the context of future public funding of assets. It can also inhibit the making of sometimes difficult decisions on longer-term operational and investment choices.

At a minimum, Government should create greater options for private sector involvement through supporting efficiency led improvements in government business returns, and increased information transparency. The planning processes of all infrastructure owners must be clear and transparent, with defined objectives, timeframes and opportunities for industry and community involvement.

The evidentiary standards for national infrastructure funding are changing. Led by IA and accepted by successive Australian governments, there is a trend toward the provision of detailed strategic and economic analysis to justify major infrastructure investment that involves Australian Government funding.

The recent NB2 program provides an example of this. All projects submitted required benefit cost analysis consistent with IA methodology. Tasmania was successful in securing over \$500 million in funding but the project level assessments show the difficult relationship between Tasmania's low and disaggregated volumes, which are a key driver of positive economic outcomes under current methodologies, and the sheer cost of delivering infrastructure.

From an infrastructure perspective (alternative funding models are discussed in section 3.3.7), a logical response to Tasmania's infrastructure funding challenge is to target investment to the highest priority sections of the network both within and across modes.

The FLCT recommends that government assess infrastructure funding across modes – road, rail and ports – to ensure funding is directed to those parts of the system that will deliver the best outcomes for business and the community.

Protecting key freight corridors

Once identified, key freight corridors and assets should be supported by appropriate planning frameworks, including uniform planning zones across Tasmania, and streamlined regulatory provisions.

The FLCT understands that the Tasmanian and local governments are in the process of finalising new planning schemes. The FLCT recommends that this process deliver one planning zone and one uniform assessment process to major transport infrastructure corridors and nodes.

3.3 Market involvement in future planning and investment frameworks, and service provision

3.3.1 Bass Strait shipping is a key part of the supply chains of most Tasmanian businesses. It operates as a complex and imperfect market

The FLCT has made a number of observations on the operation of Bass Strait shipping services. These are summarised here for the purposes of highlighting the complexities of this market and the issues that face shippers, ship operators and government. Specific issues are discussed further in this section and throughout the report.

- *Bass Strait can be expensive for users and providers.* Bass Strait is a short sea trade, with high frequency, daily services. It is a potentially more expensive model to both provide and use. Fixed costs (fuel, wages) for operators are high. For shippers, prices are influenced by the volume and regularity of their freight movements.
- *Bass Strait shipping services are undifferentiated in terms of service choice, with all operators providing a high frequency service.* This service model meets the needs of many shippers, but not all.
- *The Australian Government subsidises some, but not all, freight movements.* For shippers of eligible goods, the TFES is a major benefit. International exporters do not receive TFES assistance.
- *International exporters and importers tranship through the Port of Melbourne.* Transhipment adds significant cost and complexity to supply chains. It also provides expanded service choices for freight users.
- *The high number of empty containers moving across Bass Strait is an inefficiency in the system, but one that is not easy to address.* There is a direct cost associated with positioning empty containers across Bass Strait, but this is not always transparent to shippers.
- *Base cargos are important.* Tasmania has a number of large shippers whose legitimate commercial decisions influence market outcomes. For example, five companies account for one third of exports by TEU. The ability to secure adequate base cargos is a factor in the viability of a direct international container service.
- *Nationally, coastal shipping arrangements restrict the ability of international vessels to also carry domestic cargo.* This reduces service options for shippers and affects the viability for a future direct international container service from Tasmania.
- *It is unlikely that a physical connection with mainland Australia will replace Bass Strait shipping services in the foreseeable future.* This is a longer-term concept that should not be discounted. As a project, it would deliver transformative benefits to Tasmania. Refer to Appendix 4 for details.

3.3.2 To an extent, Bass Strait is an expensive trade to serve

From a supply side perspective, the factors affecting costs on Bass Strait are complex -

- Bass Strait trade is 'short sea' voyage. Freight is loaded and discharged every 24 hours. This continuous loading and unloading, requires higher crew numbers compared to longer distance international liner operations. It also results in higher vessel maintenance costs.
- Tasmania's diverse commodity base presents freight in a variety of configurations, all of which is accepted by Bass Strait ship operators. This can lead to inefficiencies in terminal operation and the utilization of vessel space.
- Australian fuel costs are substantially higher than major bunkering ports in Asia. Fuel costs are estimated to be 30% of the cost of a voyage to vessel owners.
- Wages and costs for Australian crews are three to six times higher than rates of international vessels.

The cost of Bass Strait is often compared to direct international shipping to Asia or similar short sea services elsewhere in the world. In benchmarking shipping costs, Bass Strait shipping was found to be 24% more expensive than a similar European service. However fixed costs (labour and fuel) across Bass Strait are also 23% more expensive than in Europe.

Tasmanian Roll-on/Roll-off (RoRo) services are efficient in their stevedoring operations, achieving similar 'lift' rates to container terminals elsewhere. Terminals also compare favorably with other mainland port terminals in throughput and a willingness to accept freight for shipment on the same day.

3.3.3 Bass Strait is proportionally the single largest transport cost in the supply chain of a typical Tasmanian business. The TFES is critical to reducing costs

For shippers, price follows volume and seasonality. Shippers with low volumes or who have highly seasonal requirements and/or time sensitive fresh products pay more than large volume, steady shippers. The latter are able to secure considerable discounts to nominal shipping rates. For small to medium sized shippers, lower volumes mean they are less able to negotiate a better price outcome.

Indicative container freight rates across Bass Strait based on volume are shown in Table I. These are 'blue water' rates only and do not include additional freight costs such as land transport and empty container repositioning. The rates show the significant variation in rates paid by shippers – a low-volume shipper can pay up to twice that of a higher volume shipper. The FLCT understands some high volume shippers can pay even lower rates than those quoted below.

Table 1 Indicative Bass Strait shipping rates

Container	High Volume	Medium Volume	Low Volume
20' Container	\$600 - \$800	\$800 - \$1,000	\$1,000 - \$1,200
20' Reefer equivalent (includes refrigerated trailers)	<\$1,000	\$1,000 - \$1,400	\$1,400 - \$1,800

Source: Aurecon, Supply chains in Tasmania, page 80

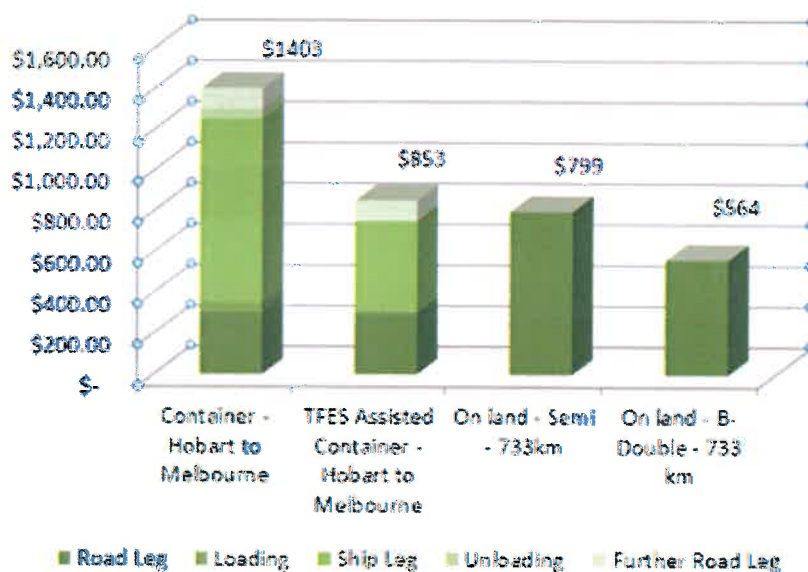
The TFES is provided by the Australian Government on the basis that the cost of shipping across Bass Strait is higher than road transport equivalent distances.

A 2006 Productivity Commission Inquiry identified over 1,300 shippers in Tasmania that benefited from the TFES.

For shippers of eligible goods, the TFES is a major benefit. The cost of freight can be reduced to between one third and one half of wharf to wharf costs.

Figure 4 shows the cost to ship a container from Hobart to Melbourne, compared to an equivalent distance on land. The Hobart to Melbourne leg (\$1,403) is almost double the cost to transport a container the same distance on land by semi-trailer (\$799). These costs do not include additional costs incurred by freight users in Tasmania such as empty container repositioning.

Figure 4 Comparative transport cost breakdown



Source: Aurecon, Supply chains in Tasmania, page 91

The TFES continues to be the subject of significant discussion. Some stakeholders support extension of the TFES to all exports and imports, and/or to international exports.

Others question its impact on Tasmania's freight market. For example, Juturna argued that without the TFES to offset the cost of freight services, shippers who require a lower service level would have already worked with providers to establish a lower cost, less-frequent arrangement. The existence of the TFES may also be priced into freight services. The FLCT acknowledges but does not support this view.

Recent political commentary raised the idea of a single equalisation scheme covering all vehicles, passengers and freight entering and leaving Tasmania, including international exports.

In the current economic climate, the TFES is critical to Tasmanian businesses.

The Australian Government has recently commenced a joint Productivity Commission - Australian Competition and Consumer Commission (ACCC) inquiry into Tasmanian shipping and freight, including its cost and competitiveness. The Australian Government has previously committed to retaining the TFES. The Inquiry will assess the effectiveness of current arrangements for the movement of freight across Bass Strait, and identify potential alternatives.

The FLCT's view is that any changes to the TFES need careful consideration, and should demonstrate commensurate, sustainable benefits for business over time. If not well considered, the risks to business of any changes to the TFES are high.

The FLCT recommends that the Tasmanian Government highlight the critical importance of the TFES to Tasmanian businesses as part of the current Australian Government inquiry into freight costs and competitiveness in Tasmania lobby for maintenance of at least existing funding levels and advocate for extension to international exports.

3.3.4 Bass Strait shipping services are undifferentiated in terms of service choice. The high frequency/high cost service structure exceeds the needs of some shippers

Three operators provide RoRo shipping services from Burnie and Devonport ports to the Port of Melbourne. Each operates two ships to provide daily northbound and southbound services. Services integrate with road and rail transport, allowing goods produced almost anywhere in Tasmania on one day to be delivered to mainland markets the following day. This is a 24-hour transit time from farm to market, and better than many mainland producers can achieve.

Many Tasmanian businesses rely on this level of service. Others have developed to take advantage of it – for example by not warehousing in Tasmania. Others derive no benefit, but in the absence of an alternative, must use and pay for the service.

Aurecon estimated around 15% of the current export market needs a high frequency service, with about half taking advantage of it and factoring it into their logistics chains (see Table 2). Juturna noted that major importers, including large retail providers, do not require the current high levels of service.

There may be market demand for other service models including a lower frequency service. The FLCT recommends further investigation of the level of commercial demand for lower frequency domestic container service. This will require the collection of better data on exporter and importer service needs.

Table 2 Tasmanian outbound commodity representative supply chains

Supply Chain	Commodity	Perishable	Over night	Time sensitive	Price sensitive	Volume FY 11/12 (TEU)	Volume %
Fresh	Vegetables, Fish, Fruit	×	×	×		35,000	15%
Low cost	Zinc, Aluminium, Scrap Metal, Pulp and waste paper, Furniture, Timber				×	30,000	13%
Low inventory	Newsprint, Paper, Misc manufactures, Beer, Crude Fertiliser and minerals, Animal foods			×		52,000	23%
Perishable	Confectionery, Butter and Cheese, Misc Food preparations, Livestock, Meat, Frozen vegetables	×		×		29,000	13%
Empty	Empty containers				×	74,000	33%
Unclassified	Various					7,000	3%
	Total	28%	15%	51%	46%	227,000	

Source: Aurecon, Supply chains in Tasmania, page 65

3.3.5 Shippers experience peak season capacity issues. There are a range of options to address both current and future capacity needs

Bass Strait shipping services experience two seasonal peaks -

- Outbound freight peaks between February and May, reflecting the movement of large volumes of agricultural products.
- Inbound freight peaks in October driven by an influx of retail goods for Christmas, and in March to May, related to an inflow of empty containers for agricultural export.

During these periods, some freight is not shipped, and the displacement of empty containers can add to lead times for shippers.

Currently, all three shipping operators are understood to be considering renewing and expanding their capacity through larger and/or additional vessels. For some operators, the decision relates to replacement of ageing vessels.

While there are seasonal capacity issues, it is not clear that a significant step change in capacity is required on Bass Strait to meet demand that is growing incrementally. For shippers, any significant increase in capacity could mean prices go down as ship operators compete for volume. However, if the capacity provided is too high, the viability of existing operators will be challenged.

This is a particularly sensitive issue in the circumstances where a Tasmanian Government-owned ship operator is considering expanding capacity.

Options to address immediate capacity issues include reducing the volume of empty container movements; additional sailings (already provided to an extent by some operators); and the introduction of lower-frequency services. Any future international container service to Tasmania will take some freight out of the domestic market, freeing up some additional capacity.

For longer-term capacity issues, the option of investing in fewer but slightly larger vessels to better match the forecast level of freight demand has been suggested. This would have the added benefit of reducing the per unit cost of providing Bass Strait shipping services. The introduction of even faster ferries has also been suggested.

The FLCT recommends that capacity increases be examined in the context of forecast growth, user needs, alternative service models and strategic port planning. The Tasmanian Government should play a coordinating role but, as noted above, its position as owner of one shipping operator presents real competition issues.

3.3.6 The viability of a commercially sustainable international shipping service must be determined by the market

Tasmania's international container volumes are around 37,000 TEU out of a total container task of 450,000 TUE. Potential volumes are likely to be higher when products that undergo processing in mainland destinations and/or are re-packaged ahead of international export, are included. Import volumes to Tasmania are growing, particularly for consumer goods.

Tasmania's international export freight market is diverse, with different service needs related to product, cost structures and end destinations.

While there are market challenges, the FLCT recognises there is a need to definitively prove or disprove the viability of an international container service to Tasmania. This must include direct testing of a market which is complex and difficult to analyse.

The FLCT engaged consultants, Thompson Clarke Shipping (TCS), to assess the attractiveness and financial viability of providing a regular international container service to a Tasmanian port. Direct engagement with major international shipping lines on their commercial requirements was a focus of this work.

South-east Australia currently has twenty-five separate long haul international container services provided by eighteen operators. The majority call at the Port of Melbourne. TCS evaluated the potential of each service to call in Tasmania, together with their attractiveness to Tasmanian shippers. Evaluation criteria included-

- *Service routing*: ability to transit Bass Strait to minimise the time and related costs of a deviation call to Tasmania.
- *Vessel size*: must be <3,000 TEU given the channel, berth box and berth size constraints at Bell Bay and Burnie ports.
- *Port rotation*: access to Asia of prime importance given around 75% of Tasmania's international exports and 60% of its international imports involve that continent.
- *Same-line transshipments*: important given that no single service is likely to serve more than one region in Asia directly.
- *Equipment logistics*: Australia has a surplus of 40 foot containers and a shortage of 20 foot and refrigerated containers for exports. Any routing that alleviates this supply problem is advantageous.

Based on this evaluation and subsequent discussions with international shipping lines, a list of potentially interested lines was identified. From this list, a small number of lines were shortlisted for further detailed discussions. They were categorised as major players with a genuine interest in taking discussions further.

TCS, on behalf of the FLCT, together with representatives of the Tasmanian Department of Infrastructure, Energy and Resources met with the national managers of each of the short-listed lines. All indicated they will provide detailed proposals to the Tasmanian Government during December 2013.

The Tasmanian Government has also held discussions with major international exporters and importers to understand their freight volumes and service needs.

The outcomes of TCS' work confirm there is genuine interest in an international service to Tasmania.

The FLCT recommends that the Tasmanian Government continue to work with the shortlisted shipping lines, together with other prospective shipping lines with an interest in providing a predominantly commercial service.

Any commercially sustainable service will require a clear commitment from international exporters to aggregate their product through one port and to support the service during initial start-up. Attracting sufficient base load cargo is important.

The need for any transitional government funding has been raised and considered. The FLCT view is that any subsidies offered from public funds must be clearly demonstrated to be required and should only be offered as a bridging measure while a service is ramping up to a commercially sustainable level of utilisation.

3.3.7 Constrained infrastructure budgets are a national challenge. The potential for alternate government funding models and private sector investment, needs to be examined

Nearly all Tasmania's freight infrastructure is publicly owned and funded, and the cost of maintenance and upgrade continues to increase.

The limited consolidation or rationalisation of freight infrastructure is a key point of difference between Tasmania and mainland Australia.

Nationally, the sustainability of public investment in infrastructure is being debated in the context of constrained government budget positions. There is increased interest in private sector investment in transport infrastructure, under the right circumstances.

The FLCT notes the Australian Government has recently requested the Productivity Commission to undertake an enquiry into ways to encourage private financing and funding for major infrastructure projects.

Over the course of its work, the FLCT has heard a range of suggestions, including the operation of TasRail, TasPorts and TT-Line as commercial entities, and the lease or sale of port assets to businesses directly using these assets. These are significant decisions, and matters for further detailed investigation by Government.

The FLCT recommends that, having regard to the work to be undertaken by the Productivity Commission, the Tasmanian Government examine the potential for alternate funding models. This could include targeted divestment of non-core assets or the recycling of equity within the government business portfolio. It could also include private sector investment in freight infrastructure, and private sector contributions as part of specific freight-related developments.

3.4 Transparency and participation measures to promote innovation and competition

3.4.1 Reducing the flow of empty containers offers cost saving opportunities to shippers and can positively impact Bass Strait shipping capacity. More detailed data on empty container movements is needed

There is a large flow of empty containers in the Tasmanian freight system. Empty containers represent 33% of outbound containers and 21% of inbound containers. Aurecon estimated the number of empty containers to be around 121,370 in 2011/12. Some of the reasons for the imbalance include -

- Trade imbalance: More full containers of freight enter Tasmania on coastal shipping services than leaves.
- Seasonality: Significantly more demand for southbound freight movements compared to northbound movements between July and January.
- Container types: There is higher southbound demand for domestic full twenty-foot and forty-foot general purpose, tanktainers and trailers. Twenty-foot and forty-foot reefer containers have a higher demand northbound.
- International versus domestic: There is greater demand for full domestic containers southbound and a greater demand for full international containers northbound. These containers are not readily interchangeable due to their different sizes.

The total cost of supplying and shipping empty containers for Tasmania's freight task is significant. This cost is not always transparent to shippers, with repositioning costs included in total freight costs.

While overall trends in empty container movements were able to be determined, it was also apparent that many movements are not recorded in sufficient detail. Obtaining better information from TasPorts and shipping lines is critical to addressing this issue.

From the information available, four areas to reduce the volume of empty container movements were identified -

1. The use of international containers to transport domestic freight to Tasmania so that they can be repacked with international freight for export.
2. Cross-docking containers in Melbourne. International freight is packed in domestic containers for transport to Melbourne, and then repacked into an international container.
3. The use of refrigerated containers to pack dry freight.
4. Convertible containers. Some containers can be converted for another purpose, making them more versatile, or are able to be collapsed, making them easier and cheaper to reposition.

Large shippers with control of their own supply chains have implemented solutions for their businesses. Shipping lines and logistics operators are working with customers to 'match' imports and exports to reduce empty container movements. The use of slip sheets and alternative packaging can improve the capacity of containers.

The difference in pallet sizes between an Australian and international containers influences the ability of freight users to substitute domestic for international containers. While this is a national issue, the FLCT encourages the Tasmanian Government to pursue a longer term policy position on the standardisation of pallet sizes within relevant national transport forums.

3.4.2 Freight planning must be based on accurate data and information. An online, public access transport model for Tasmania could assist future planning for freight users, service and infrastructure providers

The FLCT has taken an evidence-based approach to its work. The FLCT has found that lack of publicly available reliable data on parts of the freight system has constrained its work.

Freight systems generate a significant amount of data – where a product is moving, how, at what tonnage. They are also dynamic and can change significantly under different scenarios. While sophisticated information systems underlie freight movements, data gaps remain. The FLCT has identified numerous information gaps in empty container movements; the market need for a lower frequency shipping service or air freight services; and publicly available upgrade and maintenance costs for freight infrastructure.

The FLCT recommends the development of a transport model which -

- Provides data and information on freight supply and demand, including empty container movements.
- Allows users to alter key assumptions (for example sector growth rates) to test possible service offerings and demand aggregation opportunities.
- Transparently reports proposed major capital expenditure and maintenance costs across road, rail, port and shipping providers.

The model should be developed by government, informed by macro-economic modelling completed for the FLCT by Juturna, and be made publicly available. This supports innovation in service provision and is a pre-condition to greater private sector involvement in transport infrastructure. It will also aid collaboration between freight users.

3.4.3 Underutilised capacity can increase costs for freight users. The viability of establishing a market based trading portal should be investigated

A trading portal is an information system which connects freight users through all aspects of a freight supply chain. Services offered can include information on imports, exports, transport and warehousing, the status and tracking of a product, and commercial transactions.

Online trading portals benefit freight users by improving the speed and efficiency of supporting supply chain processes through the online storage of real-time freight data.

Most existing systems have been established by industry to solve a specific issue. To be successful, all businesses involved in the supply chain need to be involved and committed to changing their administrative processes.

Trading portals offer a number of benefits to users, but there are challenges to their establishment, including stakeholder concerns over increased competition and data confidentiality, system reliability, and funding.

The FLCT recommends that the Tasmanian Government work with industry to understand the need for and likely commitment to a trading portal. Options for investigation include trialing a small-scale portal, or collaborating with existing portals.

3.4.4 Improved knowledge sharing across businesses can support innovation and skill development

Education and the sharing of knowledge within and across supply chains, is critical. Within individual Tasmanian businesses and industries, there is evidence of innovation in improving supply chains. Typically this is found within larger businesses which are likely to have dedicated supply chain resources. For example, one business has replaced pallets with slip sheets, increasing available container space and reducing weight.

Government and industry both have a role in facilitating supply chain information across the market to ensure all stakeholders are better informed of supply chain issues and opportunities.

Promoting opportunities for freight users to share examples of supply chain efficiency is strongly supported by the FLCT.

The FLCT has also identified the need for more skills training and employment opportunities in the freight, transport and logistics sectors. The workforce in these sectors is aging and not being replaced. There are good opportunities in these sectors for youth employment in regions where youth unemployment is high. Tasmania must maintain a skilled work force in these sectors which are so critical for the State's economic development.

3.5 Supporting small to medium freight users to improve supply chain efficiency

3.5.2 Supply chains are complex. Expert advice can help small to medium freight users improve their supply chains

Small to medium freight users represent a significant part of the Tasmanian freight market. Individually they have limited bargaining power and are likely to lack the knowledge and resources to fully optimise their position within the freight system. In terms of shipping rates, the FLCT has identified that shippers with low volumes, seasonal requirements, and/or moving time sensitive products, are likely to pay more.

Within the proposed funding associated with the broader exporters' assistance package proposed in Section 3.6.2, the supports funding of \$2.5 million over two years to establish an expert advisory panel to work with small to medium freight users to optimise their supply chain operation and reduce costs. The recommendation would see freight and logistics experts work directly with small businesses.

This initiative should particularly seek opportunities to promote greater aggregation of freight across businesses or supply chains, and to improve collaboration between businesses.

3.5.3 Greater aggregation can drive better outcomes for business and infrastructure owners. A demand aggregation case study for agriculture should be developed as a template for other freight intensive sectors with predominantly small and diverse freight users

Freight aggregation provides the opportunity to improve bargaining power and reduce costs, support larger scale investments than might otherwise be justified by a single business, and promote innovation and collaboration.

Agriculture is a high growth sector, comprised of many smaller freight users, a diversity of products, and with an export focus. Initial discussions with stakeholders across agricultural sectors have identified that while there are existing examples of close collaboration and aggregation, there are further opportunities. These might involve smaller agricultural producers collaborating together around product movement, packaging or common warehousing.

Aurecon provided examples of successful agricultural cooperative models in New Zealand, which focus on building economies of scale for producers. The more mature of these initiatives provide integrated single desk approaches, including support for growing techniques, product development, freight purchasing, distribution and marketing.

The FLCT recommends the development of a case study by the expert freight advisory panel to investigate how and under what circumstances industry collaboration can lead to greater aggregation of freight volumes (along a supply chain or at the point of packaging and warehousing), and the impact this might have on freight costs and efficiency.

The FLCT recommends that the expert freight advisory panel be used to identify an appropriate opportunity through which a template approach can be developed which can be generally applied to other sectors.

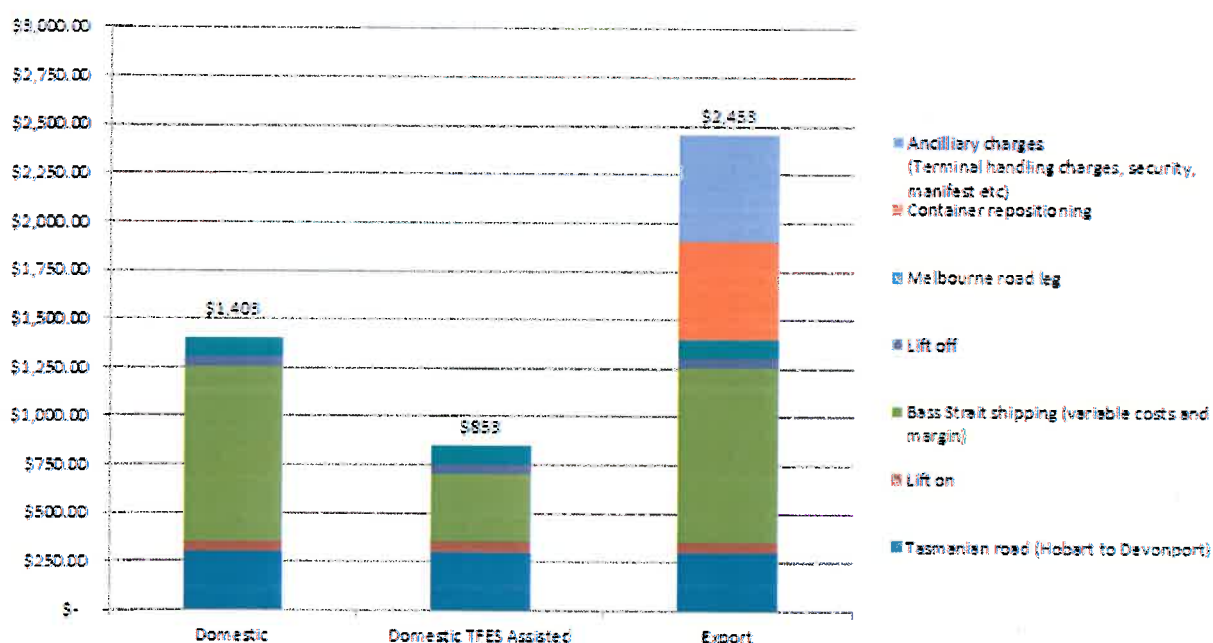
3.6 Assisting international exporters to build and access markets

3.6.1 Tasmania's international exporters are disadvantaged by existing Bass Strait subsidy arrangements

The FLCT has carefully considered the situation facing international exporters. It accepts that these freight users are disadvantaged, being ineligible for TFES, and facing additional transshipment costs. Some Tasmanian export businesses face significant challenges.

Figure 5 shows comparative transport costs for domestic and international exporters. With no TFES assistance, international shippers pay double the Bass Strait shipping costs of a TFES-assisted domestic exporter. International exporters also pay additional costs associated with repositioning empty containers.

Figure 5 Comparative domestic and international export costs, Tasmania



Source: Aurecon, Supply chains in Tasmania, page 87

Tasmania has a diverse range of international exporters, with different service needs related to their product, cost structures and end destinations. Thompson Clarke Shipping (TCS) note that no service will 'be able to meet all the international service demands of the Tasmanian cargo community.'

While they are very expensive for some, Bass Strait shipping services do offer advantages for Tasmania's international exporters. The ability to connect to frequent international container services to a wide range of destinations through the Port of Melbourne is the most significant advantage. We call this 'The Melbourne Option.'

The majority of long haul international container services operating in south-east Australia call at the Port of Melbourne. TCS note that this level of service effectively provides Tasmanian exporters with access to daily service options to south-east and north-east Asia, and every other day to North America and Europe.

The FLCT recommends extension of the TFES to international exports. This option maximises benefits for the greatest number of exporters, supporting the diversity of Tasmania's export freight needs. Even more important is the fact that extension of the TFES to international exports preserves The Melbourne Option and offers that option at a more realistic net cost to Tasmanian exporters.

3.6.2 Immediate assistance is needed to address the freight challenges facing Tasmanian international exporters

The challenges for Tasmanian business are immediate and the issues are complex. Structural transition of the Tasmanian freight system will take time. Funding for international export assistance during the transitional period is critical and should be implemented in parallel with long term strategic freight solutions.

The FLCT and Tasmanian business welcomed the joint commitment of transitional funding to Tasmanian exporters, amounting to \$20 million per annum for two years, which was made by the Tasmanian Government and previous Australian Labor Government in August 2013. We note that that was a funding commitment by the previous Australian Government, not just an election promise.

Funding under that assistance program was to be delivered through annual rounds of competitive grants tied to improving access to export markets and supporting investments which improve freight efficiency, which could include logistics improvements, capital investment, inventory management or industry collaboration. More detail on how the program should work is provided in the *Chair's Interim Findings*.

The FLCT calls on the Australian Government and the Tasmanian Government to re-affirm their joint commitment and to proceed to provide transitional funding as quickly as possible.

3.6.3 Tasmanian businesses rely on coastal shipping. National policies that support greater service choice for shippers are important

Juturna observed that with no access to alternative freight service choices, 'any inefficiencies in national coastal shipping laws impact most strongly on Tasmania.' Recent national regulatory frameworks have restricted the ability of international vessels to carry domestic cargo within Australian waters. Previous international container services to Tasmania were able to do this, and that offered greater service choice for Tasmanian shippers.

The Australian Government has indicated its intention to review coastal shipping arrangements. This review provides an opportunity to consider whether the current regulatory arrangements have influenced or impacted on the appeal of coastal trade to international shipping lines.

It is noted that the Australian Maritime Worker's Union's response to the FLCT's *Discussion Paper* argued strongly that the *Coastal Trading Act* is not central to the competitiveness of domestic shipping, as wage outcomes are set through the *Fair Work Act* and relevant High Court decisions. This proposition should be a key focus for the Australian Government review.

The FLCT recommends the Tasmanian Government lobbies strongly for any changes that result in greater service choice for Tasmanian shippers.

4. NEXT STEPS

The FLCT has recommended the following next steps -

4.1 Tasmanian Freight Strategy

The work of the FLCT has confirmed the importance of finalising a Tasmanian Freight Strategy.

The Tasmanian Freight Strategy should adopt the FLCT's guiding objective and be based on the FLCT's work, particularly this final advisory report. It should also be informed by the reviews commissioned by the Australian Government.

The Tasmanian Government should finalise a Tasmanian Freight Strategy by 30 June 2014 and ensure that the Strategy -

- Incorporates the objective for the Tasmanian Freight System;
- Is based on the outputs, particularly this final advisory report;
- Is based on long-term freight analysis;
- Directly involves industry participants from the freight market;
- Identifies key freight corridors and intermodal points for priority investment;
- Addresses the issue of duplicated port, road and rail infrastructure;
- Clearly articulates the role of, and target standards for, individual modes within the freight system;
- Those roles and targets should be reflected in the strategies of all government owned infrastructure providers and other key stakeholders;
- Proactively anticipates freight system issues by linking planning to current transport model data; and
- Is regularly updated.

4.2 Freight Advisory Group

The work of the FLCT has highlighted the benefits of industry and government working together to address freight issues. The FLCT recommends that the Tasmanian Government establish an on-going high-level public-private freight advisory group, to ensure the benefits of collaboration continue.

4.3 Funding

The FLCT was established with a budget of \$1.5 million from the Australian Government. The FLCT has expended \$850,00 in undertaking its investigations and delivering this final report.

The FLCT recommends that all remaining funding is applied to the completion of a Tasmanian Freight Strategy and the establishment and operation of the freight advisory group.

APPENDICES

Appendix I. FLCT Terms of Reference

Terms of Reference

The Australian Government announced details of a one-off \$20 million funding package to assist Tasmanian exporters reach international markets following the decision in 2011 by Tasmania's sole international shipping container operator AAA to cease operations. The funding package is to be used on three key initiatives -

- provision of direct and immediate assistance to Tasmanian exporters through a one-off payment to help them stay competitive in the new shipping environment (\$14.5 million);
- investment in infrastructure improvements at the Port of Burnie to increase container handling capacity and enhance the efficiency of movements within the port (\$4 million); and
- establishment of a freight logistics coordination team (\$1.5 million).

Purpose

The primary purpose of the Freight Logistics Coordination Team is to provide expert advice and guide the completion of a long-term freight strategy in Tasmania and to provide recommendations to the Minister for Infrastructure on Tasmanian supply chain issues as part of this process.

Role

The Freight Logistics Coordination Team will be responsible for guiding the development of a comprehensive long-term freight strategy for Tasmania, including -

- provision of advice and stakeholder input to facilitate the delivery of the Team's work program;
- consideration of industry issues and trends relevant to the development of Tasmania's freight and logistics sector;
- collective development of actions and solutions to address these issues and improve coordination between customers and road, rail and port infrastructure providers; and
- identification of credible future freight demand scenarios to inform the development of the Strategy.

Role of the Chair

The Chair will be responsible for -

- leading Team meetings;
- ensuring the Team remains focused on its role;
- acting as the first point of contact and spokesperson for the Team as required;
- undertaking consultations or briefings as required on behalf of the Team; and
- providing advice to the Secretary of the Department of Infrastructure, Energy and Resources (DIER) and the Minister for Infrastructure.

Membership

Chair

The Chair of the Tasmanian Infrastructure Advisory Council will be *ex officio* Chair of the Freight Logistics Coordination Team.

Composition

Membership of the Team will be representative in nature and will ideally comprise representatives from the following groups -

- rail, port and road infrastructure providers;
- peak industry bodies representing freight users, transport industry, business and key sectors;
- major shippers and producers;
- shipping and road transport providers; and
- logistics providers.

Members will be appointed by the Minister for Infrastructure, based on his determination of the appropriate mix of representation, skills and experience. Team membership will be kept to a reasonable level, determined by the Minister for Infrastructure, to ensure the Team is effective. It is suggested that membership numbers, including the Chair, not exceed eighteen (18) people.

Sub-groups of the Team may be established by the Chair as required, to support delivery of the work program.

The Team will report to the Minister for Infrastructure through the Secretary of DIER, at key work program milestones.

Term

The Freight Logistics Coordination Team will operate over two financial years and will terminate operation on either the completion of its work program or the 30 June 2014, whichever is earlier. The Minister may extend the operation of the Team as required.

Members will be appointed for an initial twelve (12) month term. Existing members may be extended for more than one term, as appropriate, upon re-nomination and agreement by the Minister for Infrastructure.

Appointment of Members

Subject to the exceptions outlined below, members of the Team will be selected through a public Expression of Interest (EOI) process in accordance with Tasmanian Government requirements.

All members will be selected and appointed for their -

- involvement, knowledge and understanding of their mode or sector; and
- ability to actively and appropriately represent and communicate with their mode or sector.

Members should have a sufficient level of seniority to enable them to act effectively and participate in discussions and contribute to progressing the work program. As convenor, the State road infrastructure provider (Department of Infrastructure Energy and Resources) will nominate an appropriate representative to join the Team.

Remuneration

Any rates of remuneration will be set in accordance with the Tasmanian Government remuneration guidelines.

Working Arrangements

Meeting Schedule

The Team will meet up to six times a year, or additionally on an as-needs basis to progress the work program. The Chair may call additional meetings as required.

Proxies

It is an expectation that members will attend meetings in person and proxies will only attend where they are temporarily filling the role of the member, with the agreement of the Chair. Members who are unable to attend meetings will receive copies of papers and minutes.

Agendas and Papers

Meeting agendas will be circulated by the Secretariat in consultation with members and will be circulated with relevant issues papers at least one week prior to meetings. Matters will be considered and decided in accordance with the agenda.

Minutes

Minutes will be prepared following each meeting and will be distributed to members in a timely manner following each meeting.

Secretariat, Administrative and Research Support

Secretariat support for the Team will be provided by the Infrastructure Strategy Division of the Department of Infrastructure, Energy and Resources (DIER). The Secretariat will be responsible for -

- organising meetings including venue, agendas, papers and minutes; and
- preparing, or facilitating the provision of appropriate analysis, reports, communication materials, and other information as required to support the work of the Team.

Communication

Publication of information relating to the workings of the Team will be managed in accordance with the provisions of the *Right to Information Act 2009*.

Work Program

In addition to any specific areas of focus identified by the Team, the following outputs will be required to be delivered -

- the development of a comprehensive long-term freight strategy for Tasmania;
- current supply chain issue identification, including an assessment of future trends relevant to strategy development;
- credible long range commodity forecasting and enhanced freight demand modeling capability;
- comprehensive freight system planning focusing on the principal freight network (Hobart to Northern Ports), including consideration of higher productivity access;
- appropriate analysis to inform long term port planning; and
- supply chain cost benchmarking, with a focus on Bass Strait Shipping costs.

To ensure these outputs are delivered, Team members may be required to work in smaller expert sub-groups to ensure effective advice and input can be provided across the varying work streams.

Funding Support

Funding to undertake the work program will be available out of the \$1.5 million assistance funding from the Australian Government. The Team's role will be to provide advice on the allocation of this funding but not approval, approval lies with the Minister for Infrastructure.

Timing of Deliverables

The first meeting of the Team will be held in the last quarter of 2012. A scoping document will be provided to the Minister for Infrastructure by the end of 2012 which will include a detailed program delivery schedule that identifies work streams and allocates responsibility for completion. This will further identify the key policy issues that need to be addressed for the Strategy to be completed.

Appendix 2. FLCT Key activities and milestones

Nov 2012	Dec 2012	Jan 2013	Feb 2013	Mar 2013	April 2013	May 2013	June 2013	July 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013
FLCT Meetings (Team and Sub-Groups)												
FLCT Inception meeting Terms of Reference, objectives Sub-groups established		Sub-groups Terms of Reference and objectives Work program Major consultancy scopes	FLCT Draft FLCT objective Agreed work program Consultants appointed International shipping paper	Sub-groups Interim feedback to consultants	FLCT Consultant's interim findings	FLCT Final feedback, consultant reports Chair's interim Report Empty containers scope	Sub-groups On-island issues Empties consultancy International shipping consultancy	FLCT Results of empty containers consultancy	Sub-groups Discussion Paper Advisory Report Preparation On-island issues Final analysis and consultancies			FLCT Discussion and confirmation of final report
						Sub-groups Detailed review of consultant reports				Sub-groups On-island issues	Sub-groups On-island issues	Sub-groups Discussion of key recommendations
Consultancies and related activities												
Tasmanian Freight Infrastructure Systems (Iuturna)												
Supply Chains in Tasmania (Aurecon)												
International Container Shipping Services Tasmania (GPS Logistics)												
Supply Chain Analysis (review of empty container movements) (Aurecon)												
International Shipping (commercial viability review) (Thompson Clarke)												
Final Reports												
International Container Shipping Service Viability for Tasmania												
Chair's Interim Findings												
Final reports, Aurecon and Iuturna												
FLCT discussion paper Empty container movements report												
Final Advisory Report												

Appendix 3. Overview of the Nation Building 2 Program

The Nation Building 2 (NB2) Program was the previous Federal Labor Government's national transport funding program, running for five years from 2014/15. It has recently been re-named the Infrastructure Investment Fund by the new Australian Government.

In 2012, all states provided detailed project submissions, supported by economic analysis. Projects over \$100 million were assessed by Infrastructure Australia.

The Tasmanian Government submitted the following freight-related projects -

1. Rail Revitalisation Program	\$240 million
• Burnie to Hobart rail upgrades	\$197.4 million
• Melba Line	\$36.7 million
• Fingal Line	\$4.7 million
• Derwent Valley Line	\$1.2 million
2. Brooker Highway Upgrades	\$37 million
• Elwick-Goodwood to Howard Road	\$32 million
• Domain Highway interchange (Planning)	\$5 million
3. Illawarra Main Road	\$142 million
• South Perth Bypass	\$84 million
• Illawarra Main Road Upgrade	\$58 million
4. Bagdad Upgrades and Bagdad Bypass planning	\$35 million
5. Midland Highway – Duplication, Perth-Breadalbane:	\$72 million
6. New Bridgewater Bridge – final planning	\$15 million
7. Murchison Highway	\$34 million
8. Birralelee Road freight corridor	\$48 million
9. Bass Highway (Latrobe to Deloraine) Planning	\$5 million
	\$628 million

The Tasmanian Government's covering submission and all individual project submissions are available on the Department of Infrastructure, Energy and Resources' website: www.dier.tas.gov.au/plans_and_strategy/nation_building_2

Appendix 4. A physical connection across Bass Strait?

The FLCT has taken a long term view in its work. What might be impossible or impractical now may well be a feasible solution to Tasmania's freight issues in the future. A physical connection between Tasmania and the Australian mainland is one example.

With the assistance of the SMART Infrastructure Group at the University of Wollongong, an internationally renowned centre of excellence in infrastructure, and Parsons Brinckerhoff, a leading international engineering firm, the Chair of the FLCT and Chair of the FLCT Supply Chain sub-group undertook a review of the concept. Some of the ideas considered included:

- An underwater freight tunnel rather than a bridge -
- Connecting Tasmania to Victoria at proximate points (a distance of approximately 250 km);
- Exclusively for freight, no passengers;
- Serviced by rail, possibly an unmanned electric train; and
- Tunnel constructed by immersed tube technology or conventional tunnelling.

The review examined existing and proposed examples of similar undersea infrastructure in other parts of the world.

At this stage, a physical link is neither technically or economically feasible. Commercial viability is questionable and will remain so until construction technology becomes much cheaper and/or Bass Strait freight volumes and costs become much greater. For example -

- A Tasmania-Victoria tunnel would be more than twice as long as the longest conventional undersea tunnel so far constructed or proposed.
- Immersed tube technology is fairly well developed for short distance applications in calm, shallow water. Most applications are in the 1 to 10 km range. As distances and depths increase, the advantages of immersed tube technology over conventional undersea tunnels diminish considerably.
- From overseas examples, undersea tunnels of various designs between Britain and Ireland (larger volumes and shorter distance) and between Britain and the Isle of Wight (similar sized economy and shorter distance) have been the subject of considerable investigation since the nineteenth century, but found to be economically unsustainable.

Our intention in raising the proposal at this stage is to discount it as an option for the time being but to make sure it is on the radar screen. Engineering technology and capabilities are developing and FLCT research indicates that Bass Strait trade will continue to grow. If a physical connection between Tasmania and mainland Australia becomes feasible, it would be a game changer for Tasmania.

