

Opportunities and challenges

There are a number of opportunities and challenges that have the ability to inform and influence future freight movement. It is therefore critical that government, industry and broader stakeholders work together to harness opportunities and address challenges to support efficient, reliable, integrated and safe freight movement.

Operating within fiscal constraints

The 2008 global financial crisis has contributed to a constrained fiscal environment limiting public and private sector borrowings and hence investment. This will require renewed emphasis on solutions that enhance existing freight operations, services and infrastructure capacity.

Cost of infrastructure

The escalating cost of transport infrastructure is limiting the ability of the state to fund all necessary transport infrastructure requirements. Therefore, emphasis must be on enhancing the use of existing transport infrastructure, maintaining infrastructure to a 'fit for purpose' standard and exploring alternate funding options, including partnerships.

Attracting freight to rail

There is latent capacity across some sections of the rail network with the ability to support the growing freight demand. However, ensuring the rail system offers adequate access, reliability and flexibility will be essential to expanding its use. The inherent characteristics of rail make it well suited to emerging freight demands across the state. Ideally, rail is suited to freight tasks that are high volume, point-to-point pick up and delivery over long distances.

Opportunities exist to attract freight volumes to rail for agricultural and general freight tasks via alternative train operating models, enhancing contestability and promoting the use of latent infrastructure. Attracting freight to rail will also greatly benefit the road network by minimising future maintenance and development demands associated with heavy vehicles as well as provide broader safety and environmental benefits.

Higher productivity vehicles

Higher productivity heavy vehicle combinations offer important increases in productivity and efficiency for freight operators. Improving road network access for these types of vehicles offer a range of benefits such as:

- lower transport costs for the user, therefore supporting industry productivity and economic development

- minimise adverse transport impacts on the environment, community amenity and congestion
- minimise transport demand, for example reduced number of heavy vehicle movements
- enhance transport safety through safer vehicle designs
- maximise the use of existing transport infrastructure.

However, increased access for these vehicles can accelerate road damage and cause sharper maintenance issues. Therefore, access needs to be balanced with existing infrastructure capability including weight restrictions on bridges and pavements and geometric issues.

Asset management

Queensland's ageing road and rail network and its increasing maintenance demands are important considerations in how the state manages the increasing freight demand. There are also parts of the network such as bridges or road networks which were not designed to accommodate the demands associated with higher payload trains and heavy vehicles.

Future freight network investment will therefore require greater collaboration from government, stakeholder and industry in order to maintain and develop the freight system. This will be critical to maximising state, federal and private sector funding sources and ensuring that freight investment is coordinated, delivers value for money and supports future freight needs. It will also require continuous alignment and balancing of individual stakeholder priorities, issues and interests.

Opportunities:

- Improved freight system performance through heavy vehicle access systems.
- Use existing rail capacity to support freight demand.
- Greater investment in the development of the freight system.

Challenges:

- Addressing aging infrastructure and capacity limitations.
- Attracting freight volumes to rail.
- Synchronising freight stakeholder investment criteria, priorities and readiness.

Supporting a growing and diverse population

Queensland's growing population will continue to drive increases in the volume of freight to be moved. This will require a freight system that delivers improved performance levels to satisfy growing population needs.

Freight planning

Future freight planning must therefore endeavour to enhance freight capacity and network flexibility. Implicit in this type of planning is the need to identify and enhance connectivity between existing and future multimodal freight corridors and terminal locations. Improving the connectivity between modes can enhance the capacity and performance of the freight network, assist in minimising freight costs and improve network resilience against outages and adverse weather events.

Dispersed population

The dispersed nature of the state's population and the vast geographical distances between centres will require freight system planning and investment decisions to be subject to greater level of prioritisation.

Freight data

Up-to-date and reliable freight data is critical in the development of freight policy, planning and investment strategies that guide the decisions to maintain, run and develop the system. While freight data is available from various sources, its completeness in describing comparative modal freight demands is limited. Generally, commercial-in-confidence and intellectual property issues have limited the sharing of this type of information. Developing a cooperative approach that respects the interests of government and industry will be necessary to making better informed freight system decisions that deliver mutual benefits.

Opportunity:

- Improved freight system performance.

Challenges:

- Balancing the competing freight needs of a vast state.
- Supporting emerging and changing supply chain demands.
- Identifying holistic and reliable freight information.



Container train

Keeping the economy moving in a growing region

Queensland has a diverse economic base, which places significant pressure and demands on the freight network to support a broad range of freight movements. Providing a cost effective and affordable freight system that supports future freight demands will be critical to growing the economy.

Freight growth

As indicated, existing freight volumes throughout Queensland are expected to grow to 1643–1741mt by 2026.¹⁷ This growth in freight volumes will place increased demand on the system and therefore require greater emphasis on:

- using the existing system to its capacity
- planning for the future
- working with stakeholders
- balancing competing freight investment decisions
- delivering a more competitive freight environment.

Changing consumption and production

A modern economy will also lead to changing production (off-shore manufacturing) and consumption (use of e-commerce and technology) trends. This is likely to influence existing supply chains and/or lead to the development of more innovative freight solutions.

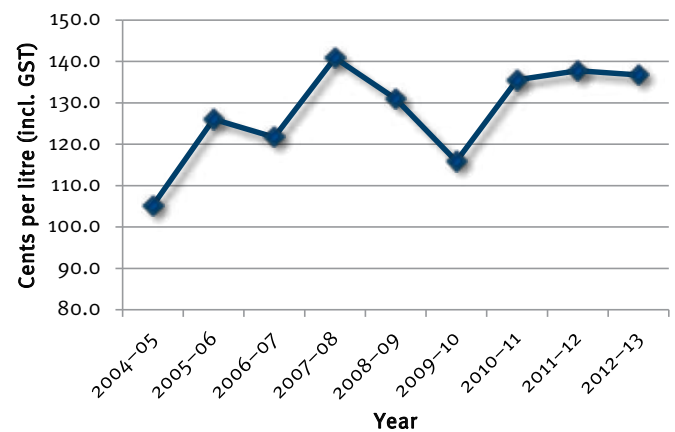
Oil vulnerability

Oil vulnerability will drive the need for the freight system to adapt to alternate sources of energy, explore more efficient supply chain models and exploit the use of technology.

Australia is a net importer of crude oil and currently imports 30% of its refinery feedstock. Furthermore, Australian refineries produce around 62% of locally consumed diesel fuel, the remainder is imported.¹⁸

Freight transport and primary industry in Queensland is heavily dependent on diesel fuel and therefore transport and production costs are sensitive to international oil prices. There is continuing debate about when global oil will reach peak production. If this occurs sooner than predicted, the most likely result will be a steady increase in oil prices. The long-term sustainability of the freight transport sector will depend on its ability to manage the impact of international oil price volatility through increased operational and energy efficiencies. **Figure 10** indicates recent fluctuations in wholesale diesel prices. Fluctuations in diesel prices will also require industry to pursue more efficient supply chain operations, which exploit the benefits of economies of scale, industry collaboration and alternate delivery practices and models.

Figure 10: Brisbane average wholesale diesel price*



*Excludes Queensland Government fuel subsidy removed in 2009.
Source: Australian Institute of Petroleum: AIP Annual Terminal Gate Prices (TGP) Data

Opportunity:

- Supporting the competitiveness and development of Queensland industry.

Challenges:

- Managing freight growth.
- Facilitating the development of more efficient supply chain models and systems.

Managing the system

All levels of government fulfil a role in relation to managing and funding the freight system. However, increasing private sector ownership of road, rail, port and airport infrastructure is adding a further dynamic to funding, coordinating and managing system requirements and priorities. Coordinating associated responsibilities and competing priorities is critical to the effective and seamless management of the system.

While the freight system in Queensland needs to be managed and developed to support industry, it also needs to be responsive to national reforms as well as broader environmental, safety and community amenity impacts.

National reforms

The movement of freight often extends beyond jurisdictional boundaries and therefore needs to be viewed in a national context. To enhance freight efficiency and productivity further simplification of policy, strategy, planning and regulation between jurisdictions is necessary to support a seamless freight network. Currently, there are a number of national initiatives underway, such as the development of the National Land Freight Strategy, designed to streamline the broader freight environment.

Adverse weather events

The reliability of Queensland's freight system is regularly impacted by extreme weather events and harsh environmental conditions which affect the ability to move freight. For example, the 2011 floods had a significant impact on the freight network resulting in outages and major damage to, and loss of, infrastructure. Repeated flood events during 2013 have impacted on 2011 reconstruction efforts adding further reconstruction requirements resulting in significant costs to the state. Queensland spends a significant amount repairing damaged transport infrastructure as a consequence of adverse weather events. The cost of infrastructure combined with constrained fiscal environment will require greater infrastructure reconstruction prioritisation and betterment to provide a more resilient freight network.

Safety

Providing a freight system that is safe for operators, users and the community is important and implicit in all aspects of transport system planning and management. The state is also working with stakeholders in relation to the development and/or implementation of various jurisdictional and national safety reforms, regulations and programs. A key example is the release of the *Queensland Road Safety Action Plan 2013–2015*.

Queensland is committed to the safe movement of dangerous goods across the state, which is regulated by state legislation. It has legislative responsibility for the transportation of radioactive substances in conjunction with the Australian Radiation Protection and Nuclear Safety Agency. The transportation of radioactive material is further informed by the *Code of Practice for the Safe Transport of Radioactive Substances 1990*, which provides uniform requirements across Australia.

With increases in freight activity likely to compound any adverse community perceptions on safety, Queensland is also taking further action to enhance the safety of heavy freight vehicles across the transport network. This includes a range of initiatives such as managing heavy vehicle driver fatigue, providing access for safer innovative heavy vehicles and employing technology to monitor compliance of heavy vehicle options (for example speed and fatigue).



2011 floods, Yaamba

Community

Freight movements may affect a community’s sense of wellbeing. As Queensland’s freight task continues to grow, managing the associated impacts on community amenity will be critical in responding to the impacts of economic growth. In Queensland, community amenity and freight activity is managed with regard to the framework in **Figure 11**.

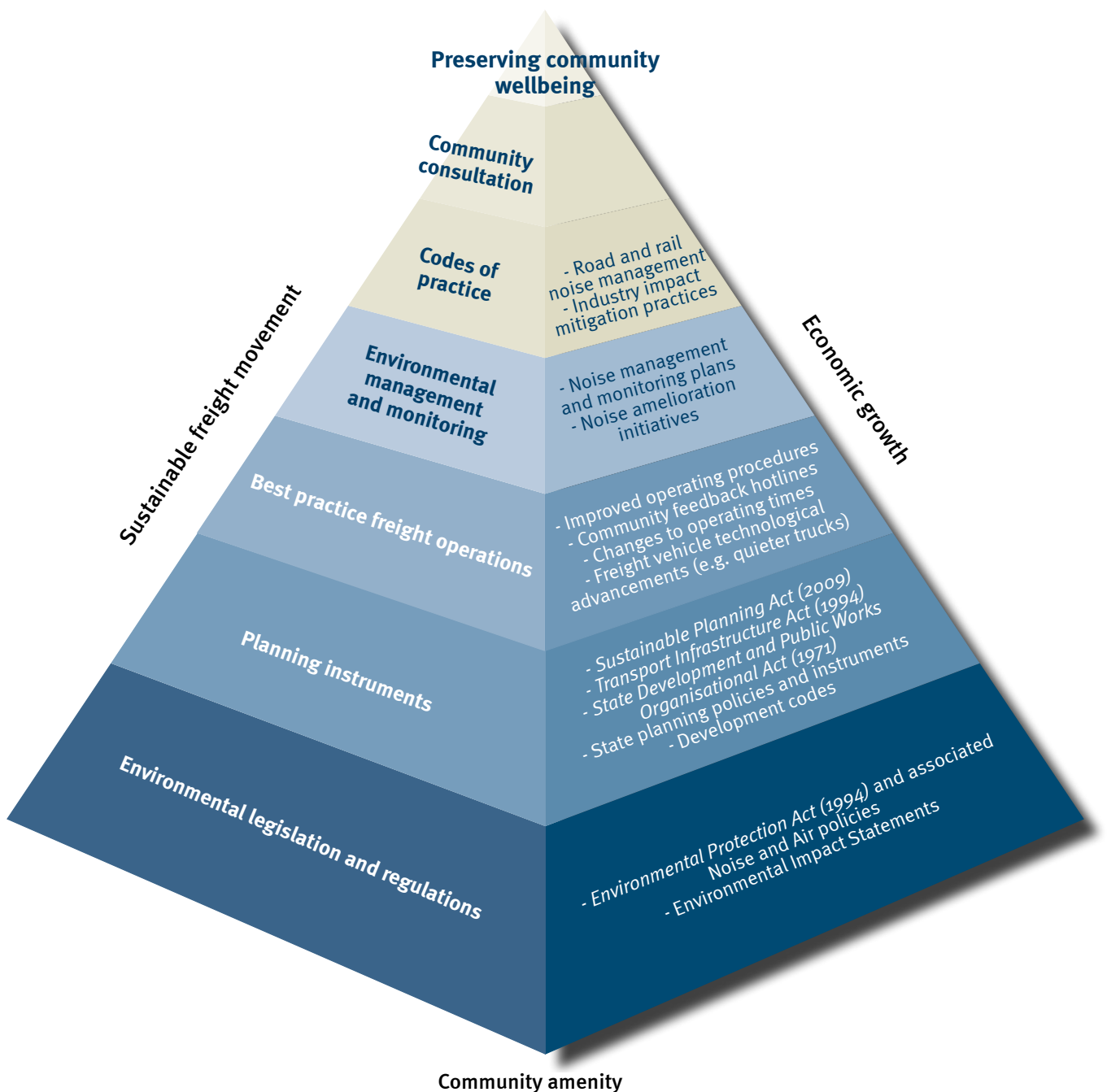
Opportunity:

- **Developing a more resilient freight system.**

Challenges:

- **Aligning diverse freight system regulatory requirements.**
- **Balancing environmental, community and safety impacts.**

Figure 11: Framework for managing community wellbeing and freight activity



Embracing new technologies

Technology is critical to freight system performance. Its application allows the ability to better manage and align transport demand and operations in relation to existing network capacity.

Intelligent Transport Systems

From a road perspective, Queensland has developed a heavy vehicle management system to target compliance for mass, safety, fatigue and dangerous goods activities. The system uses fibre-optic cabling that links weigh-in-motion detectors, remotely controlled changeable message signs, closed-circuit television cameras, transport inspectors control centres and traffic management centres. Further potential system developments include enforcement grade digital cameras and a fully automated system using high-speed weigh-in-motion detectors.

In addition, Queensland also provides real-time road traffic information (through calling 13 19 40 and visiting the website www.131940.qld.gov.au), and is actively pursuing other forms of media such as SMS messaging and radio to better inform road users.

To support rail operations, Queensland also employs Automatic Train Protection detection and integrated signalling systems (for example European Train Signalling Systems) to enhance the performance, utilisation and safety of the rail network.

Informing compliance through technology

Growth in Queensland's freight task is expected to result in a greater number of higher risk freight operations (for example OSOM), across the road network. To effectively manage associated risks, renewed emphasis and reliance is necessary for developing technologies to monitor, guide and inform road freight network demand and compliance efforts.

Opportunity:

- Enhance freight system capacity and performance through new technologies.

Challenge:

- Encouraging the takeup of new technology.



Brisbane Metropolitan Traffic Management Centre

Working with partners

The Queensland Government has a key role in the movement of freight, primarily through managing transport infrastructure, the legislative and regulatory framework and transport planning, policy and strategies. However, on a day-to-day basis it has a relatively limited influence over how freight moves. Industry generally determines when, where and why freight moves, and the mode or modes that move it. While government and industry fulfil separate roles they are clearly interdependent. Therefore, achieving optimum freight outcomes is dependent on government and industry working in partnership to plan and deliver freight solutions.

Stronger partnerships between government and industry will also help keep freight and the broader economy moving. For instance, during the extreme weather events in 2011 and 2013 the sharing of information about freight network status and freight volumes to be moved enabled government and industry to make coordinated decisions in response to critical community freight needs.

Other levels of government

All levels of government including the federal, state and local government have an important role in informing freight movement, and therefore must work together to develop an efficient freight system.

The Australian Government, along with the support of state and local government, is responsible for providing a national approach to freight. This needs to be complemented by a state and local government approach to freight policy, investment, transport and land-use planning and initiatives to support industry attraction and development.

Freight customers and industry

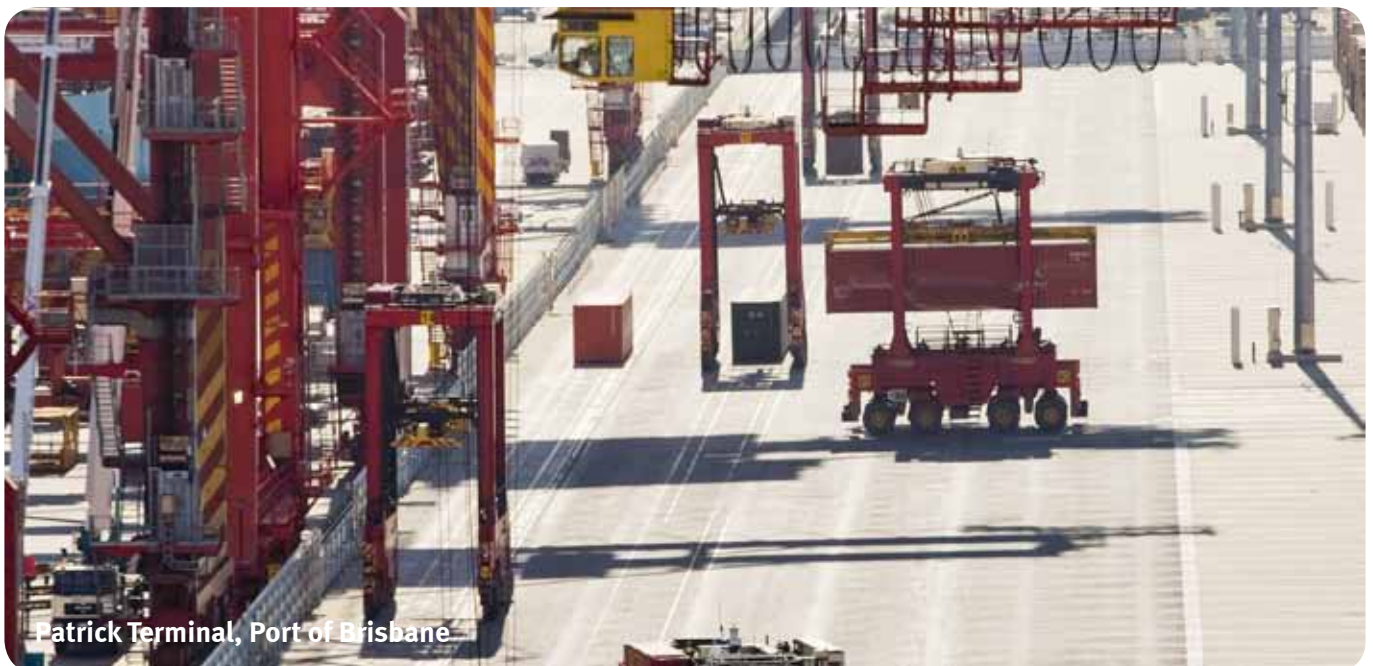
Having an effective supply chain means industry will have freight arrive in the right quantity, in the right condition, at the right place, at the right time and at the right cost. These requirements inform industry on decisions regarding location, operations, investment and business strategies.

Opportunity:

- **Develop a more cohesive and coordinated freight environment.**

Challenge:

- **Balancing freight system requirements and diverse stakeholder needs.**



Patrick Terminal, Port of Brisbane