Chapter 2

The Victorian rail industry

2.1. The rail industry is an integral part of Victoria's economic and social infrastructure, providing Victorians with affordable, efficient and safe public transport and freight services. Rail provides the cleanest and most efficient alternative to cars or trucks on our roads and, as Australia enters into the low emission carbon economy, the value of rail will be realised. It has been reported that shifting bulk freight from road to rail could reduce carbon emissions and fuel use by 60 per cent, and that the emissions intensity of the average commute is more than six times less for rail than for passenger cars.15

2.2. The social benefits delivered by rail cannot be met by any other means. A safe and efficient public transport system provides people with the essential means to carry out their work and leisure activities. There are 3.4 million customer journeys per week into and across Melbourne, and 290,000 customer journeys per week into and out of regional centres across Victoria. Public transport will be increasingly important as Victoria's population continues to grow, and the service mix will need to be able to adapt to changing travel preferences and demographic trends. The efficient movement of freight around Victoria and to and from interstate and international market places is also a key component of the economic prosperity and liveability of Victoria.

The policy framework

2.3. The Victorian rail industry operates within an evolving policy environment. For many years, rail was viewed as an underperforming industry that was operating an outdated transportation system, with freight and passenger services acting as separate and competing businesses. The rail system operated within a fragmented state and national policy environment, with inconsistent legislation across jurisdictions and various unresolved cross-border operational issues. The industry typically responded to challenges in a short-term way and within an environment where all transport modes were operating independently. Today, however, the Victorian rail industry is considered as part of a nationally significant transport industry which moves freight and passengers on shared networks. The social and environmental considerations are as important as economic considerations, and are reflected in long-term planning and integrated transport policy responses at the state and national level.

2.4. As a key player within the national context, the Victorian rail industry must be able to respond to policy and regulatory changes from all levels of government. As a safety critical industry, regulation covering areas such as accident and incident investigation, regulation and certification, inspections and audits, and enforcement of
health and safety legislation, is particularly important. Market regulation is aimed at ensuring efficient operations within passenger and freight rail. It covers issues such as access to rail infrastructure and facilities, operator licensing, competition and consumer issues, investment and sustainable development. Network regulation covers areas such as asset management, land-use policies, route utilisation strategies and performance monitoring.

The Victorian policy context

2.5. The Victorian Government has primary responsibility for Victorian rail services. As the lead agency responsible for the development and management of the public transport network in Victoria, the Department of Transport is the government department most relevant to this inquiry. The department, along with the Director of Public Transport, derives its functions and powers from the Transport Act 1983 and the Transport Integration Act 2010.

2.6. The Department of Transport’s policy framework underpinning the rail industry is outlined in two key documents: the Victorian Transport Plan and the Victorian Freight Network Strategy, known as Freight Futures.

2.7. The Victorian Government has proposed to allocate $25 billion under the Victorian Transport Plan, and is seeking additional Australian Government support for a number of significant road and rail initiatives.16 There are six priorities for action outlined in the plan:

- shaping Victoria to make jobs and services more accessible;
- linking regional, rural and metropolitan Victoria so all parts of the state share in the benefits of population and economic growth;
- creating a modern metro system by improving the capacity, frequency, reliability and safety of public transport;
- linking Victorian communities by closing gaps, reducing congestion and improving safety on roads;
- lowering the carbon footprint from transport; and
- strengthening the Victorian and Australian economies by supporting freight, industrial growth and new jobs.17

2.8. Freight Futures aims to support the development of an efficient, sustainable freight network which balances the needs of the growing Victorian economy and its population.18 The Victorian Government intends to work in partnership with industry and the federal and local governments to implement Freight Futures, to ensure that Victoria’s strategies, initiatives and aims complement relevant national initiatives and programs.

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16 Department of Transport (Victoria), Victorian Transport Plan (Melbourne: DoT, 2009), 10.
17 ibid., 7.
18 Department of Transport (Victoria), Freight Futures: Victorian Freight Network Strategy; for a more prosperous and liveable Victoria (Melbourne: DoT, 2008), 4.
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The national policy context

2.9. The Australian Government has provided valuable financial support to the rail industry through the Department of Infrastructure, Transport, Regional Development and Local Government. The Australian Government also plays an important role in promoting the safety and efficiency of Australian railways. Current departmental activities include: assisting the government to manage its Nation Building program rail investments; overseeing the Australian Rail Track Corporation; and working collaboratively with states and territories on an agreed national model for rail safety legislation and associated regulations.

2.10. The Australian Transport Council provides a forum for federal, state, territory and New Zealand Ministers to consult and provide advice to governments on the coordination and integration of all transport and road policy issues. It was established in June 1993, subsuming the functions of the Australian Transport Advisory Council. The Australian Transport Council seeks to achieve a transport system that is efficient, safe, sustainable, accessible and competitive.19

2.11. The Australian Transport Council is supported by the Standing Committee on Transport (SCOT), which comprises a nominee of each minister, generally at head of department or agency level. The standing committee is supported by a formal committee structure which provides advice on a range of policy and technical matters.20 The National Transport Commission was established in 2004 as an independent statutory body to provide advice to the Australian Transport Council.21

2.12. In May 2008, the Australian Transport Council agreed to begin a program of national reform to address significant national challenges across all passenger and freight transport. These challenges include climate change, safety, efficiency, congestion and skill shortages. The reform program is aimed at modernising Australia’s road, rail, air and sea transport systems to deliver safe and efficient outcomes and encourage future growth in a carbon constrained economy.

Rail safety

2.13. Rail is one of the safest modes of transport. However, there have typically been inconsistencies in the provisions and interpretation of rail safety regulations between jurisdictions. These inconsistencies have restricted the development and efficiency of the national industry.

2.14. The legislative requirements governing rail safety in Victoria are primarily contained in the Rail Safety Act 2006 and the Rail Safety Regulations 2006. The objectives of the Rail Safety Act are to promote the safety of rail operations, the effective management of safety risks in rail operations, continuous improvement in rail safety management, public confidence in the safety of rail transport, and the involvement of relevant stakeholders in rail safety.

2.15. Two key statutory positions have been established: the Director, Public Transport Safety; and the Chief Investigator, Transport and Marine Safety Investigations.

21 The National Road Transport Commission was formed by inter-governmental agreement in 1991 to develop and coordinate regulatory reform for nationally consistent road transport policies and laws. This was extended into rail and inter-modal transport in 2004 when it became the National Transport Commission.
2.16. Under the Rail Safety Act 2006, all Victorian rail infrastructure managers and rolling stock operators must at all times have in place a safety management system to ensure the safe management of their rail operations. The safety management system must be documented, provide a comprehensive and integrated management system for all aspects of control measure adopted, and be readily accessible and comprehensible to those who use it. The safety management system of accredited rail operators must incorporate 26 specified elements. The elements that are most relevant to this inquiry include rail safety worker competence, personnel management and information, instruction and training.

2.17. The Rail Safety Regulations 2006 prescribe requirements for the accreditation of rail infrastructure managers and rolling stock operators, emergency plans, safety management systems, alcohol and drug controls for rail safety workers, the health, fitness and competence of rail safety workers, reporting of accidents, incidents and inquiries, and fees for service.

2.18. The Council of Australian Governments (COAG) has agreed to regulation reforms which will result in the implementation of national rail safety legislation and a nationally consistent rail safety regulatory framework. A new National Safety Regulator is due to be established by the end of 2012. It will administer a single national rail safety Act, which will encompass all aspects of rail safety, including operations, equipment standards, hours of work, fatigue and worker health. It is intended that the national regulator will provide ‘best practice’ safety regulation, along with operational synergies resulting in a more uniform system and set of processes. The National Transport Commission expects that the safety and efficiency gains to be delivered through a single national rail safety regulator will improve incentives to invest and grow Australia’s rail operations.

2.19. The Commonwealth Transport Safety Investigation Act 2003 supports the safety culture in the Australian rail industry. The Act and its associated regulations cover: the conduct of independent transport safety investigations by the Australian Transport Safety Bureau; reporting of transport safety matters; making of safety action statements including safety recommendations to address safety deficiencies identified by investigations; publication of investigations results; and the protection of sensitive safety information.

Industry stakeholders

2.20. The rail industry is a 24-hour-per-day operation, encompassing a broad range of stakeholders involved in industry policy, service delivery and network maintenance. Key industry stakeholders include state and federal government departments and agencies, infrastructure managers, public transport operators, the companies that own and lease rolling stock, rail industry associations, unions, passenger support companies, local councils, the manufacturing and construction sectors, suppliers and education and training providers.

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24 Ibid.
2.21. Perhaps the most widely known companies in the Victorian rail industry are the three major passenger operators: Metro Trains Melbourne, which recently took over the operation of Melbourne's metropolitan trains from Connex Melbourne; Keolis Downer EDI which recently took over the operation of Yarra Trams from Transdev TSL; and V/Line Passenger which operates train and coach services in regional Victoria. There are also two interstate passenger rail services: the Overland (Adelaide to Melbourne) which is owned and operated by Great Southern Railways; and the XPT (Sydney to Melbourne) which is owned and operated by the State of New South Wales, trading as CountryLink.

2.22. The Victorian rail network (below rail) is managed by four principal rail infrastructure managers: Metro Trains Melbourne, V/Line Passenger, Australian Rail Track Corporation and Victorian Rail Track Corporation (VicTrack). Each rail infrastructure manager has direct responsibility to provide and maintain the infrastructure, and to ensure the safety of rail infrastructure. As the access provider, they must also put in place a process for freight and passenger rail operators to gain access to the network.

2.23. VicTrack owns the majority of Victoria’s rail land and infrastructure, including infrastructure with a heritage classification. VicTrack’s assets include land and interests in the land (this includes air space above the land), track, signals, buildings and structures, overhead wiring, power substations, communications networks and communications base stations. VicTrack also owns the majority of trains and trams that operate on the Melbourne metropolitan system. The only significant exclusions from VicTrack’s ownership of Victoria’s rail infrastructure are the Southern Cross Station precinct, privately owned sidings and certain tourist lines.

2.24. Under the Transport Act 1983, the majority of VicTrack’s assets are transferred to the Director of Public Transport who then leases them to various rail infrastructure managers and rolling stock operators. VicTrack retains responsibility for a small number of active rail sidings and yards and for rail infrastructure not in use.

2.25. VicTrack’s charter is to operate commercially in adding value to Victoria’s public transport (primarily rail) assets and to support the delivery of public transport services in a safe and efficient manner. VicTrack undertakes a range of commercial activities including: telecommunications services; property leasing and licensing; delivery of civil projects; outdoor advertising; and commercial property development. VicTrack manages more than $100 million worth of capital investment projects each year, on behalf of the Victorian community.

2.26. Under the Rail Safety Act 2006, rail infrastructure managers and rolling stock operators in Victoria must be accredited by Public Transport Safety Victoria. There are currently 24 commercial accredited rail operators in Victoria. In addition to the organisations noted above, the following companies are accredited rolling stock operators: Pacific National, Patrick Portlink, SCT Logistics, El Zorro Transport, Genesee and Wyoming Australia, Southern Shorthaul Railroad, Interail Australia and

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28 There are also 17 tourist and heritage accredited rail operators in Victoria, such as those operating Puffing Billy in the Dandenong Ranges. While the Committee acknowledges the valuable role of these operators within the community, the focus and intent of this inquiry is to examine skill shortages associated with commercial rail operations.
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South Spur Rail Services. The other accredited infrastructure managers include Downer EDI, Patrick Portlink and Southern Shorthaul Railroad. Additionally, there are five accredited companies that operate work trains and track machines: Downer EDI Works, Speno Rail Maintenance Australia, Mainco Melbourne, John Holland (Rail Division) and QR Limited.

2.27. Metlink is a partnership of Melbourne’s train, tram and bus operators. Metlink provides customers with a ‘one-stop-shop’ for information about services, fares and ticketing. Metlink is also responsible for receiving customer feedback, tracking lost property, providing advice on new ticketing initiatives, instigating research, collecting data, collecting revenue and managing a public transport think tank.

2.28. Another relevant body is the Transport Ticketing Authority, which has the dual role of overseeing Victoria’s current public transport ticketing system contract (Metcard) as well as procuring and managing the new ticketing system (myki) for Victoria.

2.29. Under the Rail Corporations Act 1996, the Essential Services Commission is the economic regulator of train and tram track access services in Victoria. The objectives of the commission are to ensure access seekers have a fair and reasonable opportunity to be provided declared rail transport services, and to promote competition in rail transport services to achieve an increase in the use of, and efficient investment in, rail and tram infrastructure. Under the Act, passenger services are given priority over freight and other services.

2.30. The Australasian Railway Association is the peak industry body representing the interests of all rail operators, track owners and managers, manufacturers of rolling stock and components and other aspects of the rail industry in Australia and New Zealand. The association’s seven key objectives for the rail industry over the period 2008 to 2017 are to:

- achieve a single regulatory framework for the rail industry;
- ensure rail is positively advantaged by the emissions trading regime relative to competitors;
- influence policy settings so governments provide sufficient incentives and investments in rail (above and below rail);
- achieve industry collaboration to improve efficiency, productivity and safety;
- campaign to reduce level crossing collisions by working with all stakeholders;
- promote long-term strategic planning and policy to ensure rail’s contribution to the economy and society is maximised; and
- facilitate collaboration to define emerging skills and technology needs to ensure efficient supply to support rail industry growth.29

2.31. There are two key unions representing employees in the Victorian rail industry. The Rail, Tram and Bus Union represents members across all rail and tram operations in Victoria. The union comprises six divisions: rail operations; tram and bus;

infrastructure; locomotive; workshops (fleet manufacture, overhaul, maintenance and service); and administration, supervisory, technical and professional. The Electrical Trades Union represents workers in a variety of industries relevant to rail. These include traction power distribution, data cabling and communication, substations and signalling. Additionally, the Australian Manufacturing Workers’ Union represents employees working in rail manufacturing.

2.32. There are a number of professional bodies representing engineers in the rail industry. Engineers Australia is the peak body for engineering practitioners in Australia, and represents all disciplines and branches of engineering with over 88,000 members Australia wide. Engineers working in the rail industry represent a wide range of engineering disciplines, including civil, electronic, electrical, mechanical, industrial and production engineering. The skills of many other engineers and engineering sub-disciplines are also called upon. There are also two professional bodies specifically for railway engineers, the Institute of Railway Signal Engineers Australasia and the Railway Technical Society of Australasia. Additionally, the Association of Professional Engineers, Scientists and Managers, Australia (APESMA) represents a range of professionals, including engineers, scientists, managers, IT professionals, architects and surveyors.

2.33. The Cooperative Research Centre (CRC) for Rail Innovation was established in 2007 as part of the Australian Government’s CRC Program. It will invest around $100 million in rail industry research by 2014 ($40 million in cash funding from the Australian Government and $60 million in-kind contribution from participating rail organisations), making it the largest research program in the history of Australian railways. The CRC for Rail Innovation is a collaborative venture between six leading organisations in the rail industry (including the Australasian Railway Association) and seven Australian universities, with another four organisations participating in a supporting role. Victorian participants include the Department of Transport and Monash University. Over 50 research projects are either underway or have been completed

2.34. Of key relevance to this inquiry, there are various national and state-based bodies responsible for advising on skill requirements in the rail industry. The three national advisory bodies are the Transport and Logistics Industry Skills Council; Manufacturing Skills Australia; and the ElectroComms and Energy Utilities Industry Skills Council (trading as EE-Oz Training Standards). The two state-based industry training boards are the Transport and Distribution Industry Training Board and the EPIC Industry Training Board.

2.35. The Rail and Tram Infrastructure Industry Committee provides a state-based forum to represent the local industry on training and development requirements across rail and tram infrastructure. It oversees the development and maintenance of industry competencies to ensure that they meet industry needs, and oversees and facilitates industry-specific training to ensure that industry competencies are maintained. The Rail and Tram Infrastructure Industry Committee is also the advisory body for the Rail Skills Centre at Newport.

30 The CRC Program links researchers with industry to realise innovation in Australian industry and focus research and development efforts towards adoption and commercialisation.
The Victorian passenger rail network

2.36. Victoria has a hub-and-spoke system of roads and public transport which centres on Melbourne. There are few transport links around outer and middle Melbourne, and across regional Victoria. Melbourne itself is a city dominated by one centre, with strong population growth on the fringe.

2.37. Through the Victorian Transport Plan, the Victorian Government aims to integrate transport and land development so that more people will live closer to jobs and other opportunities. While Melbourne’s central business district will remain the economic centre of the city, there is a recognised need to improve access to and around six ‘central activities districts’ being developed at Box Hill, Broadmeadows, Dandenong, Frankston, Footscray and Ringwood.

A snapshot of the passenger rail network

2.38. Victoria’s metropolitan train network operates 149 six-carriage trains across 400 kilometres of electrified broad gauge track. The metropolitan network has 15 lines, 211 train stations and a workforce of around 3,500 employees in a wide range of occupations, including train drivers, mechanical and electrical engineers, network operations specialists and customer service officers. The train fleet covers more than 30 million kilometres per year, servicing more than 200 million customer journeys.

2.39. The regional passenger train network runs on 4,100 kilometres of broad gauge track. There are five major lines (and two additional branches) with 20 metropolitan stations and 81 regional stations. The regional passenger train fleet comprises 40 V/locity trains, 41 locomotives, 138 carriages and 21 sprinters. A small amount of the V/Line network is being transferred to the Australian Rail Track Corporation and being converted to standard gauge.

2.40. Melbourne has one of the largest tram networks in the world, with 249 kilometres of double track, a fleet of 501 trams and around 1,900 employees. Trams travel more than 24.8 million kilometres each year on timetabled services and, in 2007–08, there were 158.3 million trips taken. The tram network includes 27 tram routes (plus the City Circle tourist route) with more than 1,770 tram stops. Around 80 per cent of Melbourne’s tram network shares road space with other vehicles.

Passenger numbers

2.41. Patronage of public transport is expected to grow strongly in Victoria in coming decades, driven by population increases and expected gains in public transport’s modal share. The Victorian Government’s goal is for 20 per cent mode share for public transport trips by 2020.

2.42. Melbourne’s public transport mode share has increased from nine per cent in 1999 to 13 per cent in 2008, with mode share in central Melbourne increasing from 52 per cent to 65 per cent. The public transport network carries about 450 million passengers each year, with more than 200 million of these trips occurring on trains.

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33 Department of Transport (Victoria), Victorian Transport Plan (Melbourne: DoT, 2009), 63.
34 ibid.
The Victorian Government forecasts that by 2012 more than 600 million public transport trips will be made each year, with about 300 million trips on trains, nearly 200 million tram trips and 100 million bus trips.\textsuperscript{35} Daily patronage is expected to grow to about 1.5 million by 2036.

2.43. Given such growth, pressure on the network (particularly during morning and afternoon peaks) is expected to continue, even with additional train services and the introduction of new rolling stock.

**Privatisation of passenger services**

2.44. Victoria’s train and tram networks were government owned and operated until 1999. The decision to privatise Victorian rail operations was announced in April 1997. The objectives of privatisation were to secure progressive improvements in the quality of services, increase patronage, minimise the long-term costs of public transport to the taxpayer, transfer risk to the private sector, and to ensure that the highest standards of safety were maintained at all times.

2.45. The model of privatisation implemented was one of franchising by means of fixed-term, re-tenderable contracts. This model enabled the government to test the market to ensure that it was receiving the most competitive possible deal, and to regularly re-test to ensure that remained the case.\textsuperscript{36} The model also provided incentives for operators to grow patronage. Modelling indicated that the creation of two metropolitan train and tram businesses was possible, without any significant loss of economies of scale or administrative efficiency.\textsuperscript{37}

2.46. This decision was announced in October 1997 and the four new corporatised train and tram businesses (Bayside Trains, Hillside Trains, Swanston Trams and Yarra Trams) replaced the Public Transport Corporation’s train and tram divisions on 1 July 1998. It was decided not to split V/Line Passenger as it was deemed too small to allow further disaggregation, especially given there were already private companies operating services to Warrnambool and Shepparton.\textsuperscript{38}

2.47. Having decided on the basic model for privatisation, a number of other key decisions were taken about how to structure the franchise. These included:

- **Passenger service requirements:** Operators would be required to provide at least the same level of service (measured in train and tram kilometres) as that provided at the beginning of the franchise, but with some flexibility to adjust service levels to match changes in demand.

- **Performance incentives/penalties:** While commercial pressure to grow revenue would be the main incentive to improve service quality, it was decided to benchmark performance outcomes against targets and pay incentives to operators who exceeded targets and penalise operators who failed to meet them.

\textsuperscript{35} ibid., 62.
\textsuperscript{37} ibid.
\textsuperscript{38} ibid.
Regulated fares: Multi-modal ticketing was retained and increases in these regulated fares were capped in line with the Consumer Price Index (CPI). Operators could also issue their own tickets.

Safety: Operators were required to gain safety accreditation from the Director of Public Transport Safety.

Vertical integration: Franchisees would have infrastructure lease agreements for track, signalling and other infrastructure that would make them responsible for improving infrastructure to cater for growing patronage.

Rolling stock control: Franchisees were to have control of trains and trams to give them responsibility for their operating environment.\textsuperscript{39}

In August 1999, this landmark reform was implemented and three private operators commenced running five franchises for Victoria’s metropolitan rail, metropolitan tram and regional rail networks. As part of the process, the Victorian Government also took the opportunity to sell a number of the rail workshops to private sector engineering concerns. This gave them the opportunity to improve their long-term viability through diversification and gave rail companies the opportunity to purchase services from the most competitive supplier.\textsuperscript{40}

Hillside Trains was subsequently re-branded as Connex, while the two metropolitan National Express franchises, Bayside Trains and Swanston Trams, were re-branded M-Train and M-Tram, respectively.\textsuperscript{41}

National Express walked away from its contracts in December 2002. This resulted in the Victorian Government resuming control of the regional rail network, while the remaining two operators, Connex Melbourne and Yarra Trams, gained full control of the metropolitan train and tram systems, respectively, with some modified conditions.

The main change related to risk: the Victorian Government took back some of the revenue risks by agreeing to top revenue up if it fell below a threshold, and requiring a sharing of profit above an upper threshold. The change also removed the revenue allocation risk that operators had faced by setting fixed percentages, a more important issue for them than overall revenue risk. Some other risk allocations were also modified. It can be argued that these and other changes help reduce the overall risk to government, as it is not in the community interest for rail operators to fail.\textsuperscript{41}

The initial train and tram franchises operated by Connex Melbourne and Transdev TSL were re-tendered in 2009 and the new operators, Metro Trains Melbourne and Keolis Downer EDI, commenced operations in November 2009. These franchises will run until 2017, with the option to extend the contracts until 2025. The regional passenger network may go out to public tender in 2014.

Rail assets and infrastructure

Delivery of a safe, reliable and cost-effective rail service requires significant investment in rolling stock and rail infrastructure, together with efficient maintenance.

\textsuperscript{39} ibid.
\textsuperscript{40} ibid., 9.
services. The Victorian rail infrastructure assets are estimated to be $17.6 billion (fair value), with additional value in V/Line locomotives and Southern Cross Station.\footnote{Supplementary information provided by VicTrack, March 2010.}

2.54. The assets which make up the rail infrastructure are diverse, complex and range in age from less than a year to more than 50 years old. Rail infrastructure includes: the track, sleepers and the foundation forming the track bed; the structures that create a pathway for the track, such as tunnels, bridges, cuttings, earthworks and drainage works; the train and passenger communications systems; structures that provide access to services and provide customer amenity such as station buildings and platforms; the electrical power supply system; the train communications system; buildings associated with the operation and maintenance of the track, such as stations, depots and yards; and plant, machinery and other equipment used for maintenance and renewal tasks. Additionally, there is a vast quantity of associated rail infrastructure which supports rail operations.

2.55. The type of rolling stock currently in service is also diverse, representing different procurement decisions made over time. For example, the metropolitan train fleet comprises four types of trains: 14 Hitachi trains which came into service between 1973 and 1981; 186 Comeng trains which were introduced between 1981 and 1990; 58 X'Trapolis trains which were introduced between 2002 and 2005; and 36 Siemens trains which came into service during 2003 and 2004. An additional 38 X'Trapolis trains will be introduced onto the metropolitan network by 2014. On the regional network, there are three main types of trains: four locomotive types introduced to the network between 1965 and 1987 which can haul four different carriage classes; 20 sprinters which came into operation between 1993 and 1995; and 39 VLocity trains (18 two-car sets and 21 three-car sets) which have been introduced to the network since 2005. Under the Victorian Transport Plan it is anticipated that the procurement of up to 20 additional carriages will be announced in 2010.\footnote{Department of Transport (Victoria), Victorian Transport Plan (Melbourne: DoT, 2009), 71.}

2.56. Failure of any rail assets or infrastructure can cause train delays, cancellations and/or safety-related incidents. Some of the major causes of infrastructure incidents include problems with the track or signalling infrastructure (including track circuits, points, signals and track and signalling power), overhead faults, track maintenance, problems with the monitors which provide vision of platforms to train drivers, and vandalism. The main types of train faults likely to result in service disruption tend to be problems with the brakes, doors or train overheads.

**Infrastructure maintenance and renewal**

2.57. The lifespan of rail assets and infrastructure varies considerably. Rolling stock typically lasts around 30 years (with a mid-life refurbishment) while rail infrastructure has a life of anything from 15 to 60 years or more. For example, wooden sleepers have a relatively short lifespan, electrical overhead has a medium lifespan and bridges and other structures have a longer lifespan.\footnote{David Greig, ‘Rail privatisation in Victoria,’ Agenda 9, no. 3 (2002): 241.}

2.58. Maintenance and renewal activities include regular inspections and routine maintenance to check the condition and functioning of infrastructure, the planned renewal of worn parts, and the unplanned work required if infrastructure or assets fail
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without warning. Investment in timely and appropriate maintenance lowers the risk of poor performance and safety-related incidents and avoids the need for more costly remedies where problems have grown unchecked.\textsuperscript{45} Considerable savings can be made by extending the life of assets, although this should be balanced with the need to upgrade systems for the future, especially where technology has advanced considerably.

2.59. At the same time as industry privatisation, responsibility for maintaining the metropolitan, intrastate and interstate rail infrastructure was contracted to private companies through leasing arrangements. This process required careful consideration of incentives for ensuring infrastructure is properly maintained.

2.60. The Department of Transport is responsible for managing maintenance arrangements on behalf of the Victorian Government. The department must ensure lease arrangements work effectively to deliver the type and quality of services expected by the community. Infrastructure should not be allowed to deteriorate to the point that the government ends up paying for a shortfall in maintenance during the lease period after the infrastructure is returned. Similarly, the department is responsible for ensuring cost-effective outcomes when the government contributes to the cost of maintenance and renewals.\textsuperscript{46}

2.61. The Victorian Government communicated its objectives for asset maintenance and renewal as part of the 2003 re-franchising negotiations. These require infrastructure managers to ensure that over the 5-year lease period:

- the infrastructure remains fit-for-purpose in terms of its ability to deliver train services safely and reliably;
- maintenance and renewal activities are consistent with a longer-term whole-of-life approach with ‘no reduction in the average remaining effective life of the pool of assets’;
- they provide clear evidence to the Department of Transport that they have achieved these objectives; and
- they maintain an adequate knowledge of the rail assets and the costs associated with maintenance and renewal.\textsuperscript{47}

2.62. In 2007, the Victorian Auditor-General reported on how well Victoria’s metropolitan, regional and interstate rail infrastructure had been maintained under the current lease arrangements. In summary, the audit found:

- The condition of the track, electrical and signalling infrastructure on the metropolitan train network was observed to be fit-for-purpose, although parts of the signalling infrastructure required improved maintenance regimes and further, targeted renewals.\textsuperscript{48}

\textsuperscript{46} ibid., 14.
\textsuperscript{47} ibid., 23.
\textsuperscript{48} ibid., 21.
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− The condition of the intrastate rail infrastructure had deteriorated and the level of maintenance and renewal activity was insufficient to sustain the levels of service found in 1999. This was evidenced by increasing numbers of infrastructure-related safety incidents and temporary speed restrictions.49

− The condition of the interstate rail infrastructure was observed as fit-for-purpose, although the results of the condition survey required by the lease were inconclusive about whether the infrastructure condition had deteriorated or improved. Furthermore, Public Transport Safety Victoria expressed concern over isolated sections of the interstate network identified as requiring urgent risk assessment and repair.50

2.63. The metropolitan and regional rail infrastructure, as well as a large part of the rolling stock, has reached a point where substantial works need to be carried out to ensure the continued safe and efficient operation of rail services. Therefore, considerable investment and trained, fully competent workers will be the keys to the success of the rail network over the coming decade.

2.64. The Victorian rail network is expected to benefit from continued government investment over coming years, through projects such as the proposed new rail tunnels, regional rail link and procurement of new trains and trams. These projects are outlined in the Victorian Transport Plan.51

A modernised metro system

2.65. The Victorian Transport Plan outlines a plan to create a mass-transit, metro-style public transport system aimed at overcoming some of the key challenges facing the metropolitan rail system, such as overcrowding and reliability problems on the train and tram lines.

2.66. The plan proposes a system with underground extensions, expansions to growth areas, new and upgraded railway stations, improved accessibility for passengers, more frequent train services, and almost double the capacity of the current network.52 It also proposes the procurement of up to 70 new six-car trains, implementation of a smartcard ticketing system, construction of a rail tunnel, elimination of level crossings in critical locations, and the employment of extra police and station staff to the network.53 The modernised system also proposes additional trams, and giving higher priority to trams on shared roads.54 Operational changes to improve efficiencies across the train network are also planned, and there will be continued integration of bus timetables with train services.55

2.67. To support the new metro system, signalling is being upgraded, stabling and maintenance facilities are being improved, and a new train control system will soon be commissioned with improved passenger information systems. A new timetable will also be progressively implemented from early 2010.56

49 ibid., 68.
50 ibid., 86, 89.
51 Department of Transport (Victoria), Victorian Transport Plan (Melbourne: DoT, 2009).
52 ibid., 14.
53 ibid., 71–72
54 ibid., 70.
55 ibid., 72.
56 ibid., 71.
2.68. Rail projects already underway in the metropolitan area include:

- Laverton Rail Upgrade, which will result in additional track being built between Laverton and the Altona Loop junction so that services can start and finish at Laverton Station;
- Westall Rail Upgrade, which is aimed at alleviating problems on the Pakenham and Cranbourne lines;
- Clifton Hill Rail Project, which will duplicate the Hurstbridge line between Clifton Hill and Westgarth;
- Craigieburn Track Upgrade, which will increase stabling facilities and provide for extra track at Craigieburn Station; and
- North Melbourne Station Upgrade.\(^{57}\)

2.69. The Victorian Transport Plan suggests that planning for the development of future rail lines is underway to develop and preserve options for a range of future rail lines. These include the new growth areas of Clyde, Mernda, Aurora and North Epping, Donnybrook/Beveridge, Upfield/Roxburgh Park and electrification of the line to Baxter.\(^{58}\) While an Airport Rail Link is not currently considered to be viable, the Victorian Government has reserved a corridor identified during an earlier planning study for such a link, and intends to reconsider the market demand in the middle of this decade.\(^{59}\) Other long-term proposed projects include: an additional rail line from Blackburn to Ringwood; the second stage of the Melbourne Metro Tunnel connecting St Kilda (Domain) to Caulfield and additional tracks from Caulfield to Westall; stabling on the Werribee corridor; a new station at Southland; an upgrade of Richmond Station; and a new tram link along Dynon Road.\(^{60}\)

Regional rail projects

2.70. In September 2000, the Victorian Government announced a commitment to improving Victoria’s regional rail network. The Regional Fast Rail project involved a substantial upgrade of Victoria’s four main regional lines: Ballarat, Bendigo, Geelong and Latrobe Valley. Works included the upgrade of 500 kilometres of track, installation of 400 new and upgraded railway signals, installation of more than 460,000 concrete sleepers, the upgrade of 170 level crossings, introduction of new rail safety systems, and new fibre optic signalling that provides broadband opportunities in regional areas. The project also included delivery of 38 new VLocity trains which travel at speeds up to 160km/h. The track and signalling works were completed and trains on the upgraded lines returned to service between December 2005 and August 2006. The Regional Fast Rail project also facilitated the introduction of a new V/Line timetable across the Victorian regional rail network, resulting in 400 more services per week for major regional centres.

2.71. Under the Victorian Transport Plan there is a proposed doubling of capacity on regional rail services, with more tracks, new and refurbished trains, and improved stabling and maintenance workshops. The current order of 54 locally built new V/Line

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\(^{57}\) ibid., 66–67.
\(^{58}\) ibid., 83.
\(^{59}\) ibid.
\(^{60}\) ibid.
train carriages will be increased by up to 20, with the first 54 carriages due to be in service by 2012. The new carriages will add 1,500 seats to the regional rail fleet.\(^{61}\) Another 56 carriages will be refurbished.\(^{62}\)

2.72. Passenger services to Maryborough are expected to commence in mid 2010. The Victorian Government also intends to assess the feasibility of returning passenger services on the Mildura corridor once a current upgrade of the freight line is complete.\(^{63}\)

2.73. The Victorian Government’s current phase of investment in the regional rail network is the Regional Rail Link, which will separate the regional and metropolitan train services. The project includes a new 40 kilometre twin-track from West Werribee to Southern Cross Station via Tarneit and Sunshine, the rebuilding of Sunshine Station with extra platforms, the construction of a new rail bridge over the Maribyrnong River, and new platforms at Southern Cross Station.\(^{64}\)

2.74. Investment in rolling stock and rail infrastructure by the Victorian Government will be supported by additional funding from the Australian Government. The Australian Rail Track Corporation has funded 17 projects to improve the efficiency on the nation’s railways. The projects (including four in Victoria) will underpin continued demand for a skilled workforce across a number of industries, including the rail transport sector.\(^{65}\)

2.75. The construction phase of three of the four Victorian projects has been completed and these projects are now awaiting commissioning. These include: two additional passing lanes on the Melbourne–Junee corridor; the completion of concrete sleepers along the Melbourne to Sydney corridor; and the construction of the Wodonga Bypass as double track.\(^{66}\) The fourth project, the Western Victoria Track Upgrade (New South Wales/Victoria) is yet to commence. This project will upgrade sections of track in Western Victoria, including re-railing, increasing ballast depth, and providing for the completion of concrete sleepers between Melbourne and Adelaide. Funding has also been allocated for the installation of around 59 new boom gates and other safety measures at rail crossings.\(^{67}\)

The Victorian freight rail network

2.76. Victoria’s metropolitan and regional freight tasks are carried on an extensive system of freight infrastructure that links Australia to the rest of the world. This system includes roads, rail lines, commercial sea ports, freight airports and intermodal terminals. Victoria’s freight transport and logistics activities contribute an estimated 14.7 per cent to Gross State Product and 334,000 jobs in freight and logistics activities across all industry sectors. Around 20.4 billion tonne kilometres of freight are moved into and out of Victoria, and to and from the Port of Melbourne and regional Victoria each year. The freight and logistics industry is not only a major part

\(^{61}\) ibid., 53.
\(^{62}\) ibid., 45.
\(^{63}\) ibid., 54.
\(^{64}\) ibid., 52.
\(^{66}\) Department of Education, Employment and Workplace Relations, Written Submission, April 2009, 9.
\(^{67}\) ibid.
of the Victorian economy, it also supports other industries critical to the national economy, including manufacturing, services and agriculture.  

2.77. An effective freight network has a range of benefits for businesses and individuals. Transport costs flow directly to the costs of everyday goods and services, and affect the competitiveness of industry exports. The economic cost of congestion in metropolitan Melbourne to all network users is estimated to be between $1.3 billion and $2.6 billion per annum. It is estimated that without substantial intervention, the cost of congestion will have doubled to at least $2.6 billion to $5.2 billion annually, by 2020. The location of freight activity areas and the way we move goods between them, including the modes, types of vehicles, the routes and the times of day, can also have a significant impact on the amenity of particular communities and the liveability of our state generally.  

2.78. To remain competitive, the freight and logistics industry must be responsive to change, whether this is change in patterns of supply and demand, change in the Victorian and Australian economies, change in the local and global trading landscapes, or change in equipment and technology. Some of the key drivers of change identified in the industry are: significant growth in the freight task; the impact of increasing congestion on freight costs; climate change; increased public awareness of sustainability and liveability issues; higher security and safety standards; the changing economy; increasing oil prices; labour and skill shortages; and changes to industry structure and technology.  

2.79. The freight rail task in regional Victoria consists of three discrete segments: bulk grains, primarily for export through Victorian commercial ports; containerised primary produce (dairy, fruit, meat and wine) movements to and from the Port of Melbourne; and general industrial transport including logs, quarry materials, cement and, potentially, mineral sands. Intrastate freight rail in Victoria is subject to significant volatility due to the agricultural commodities carried, which can be affected by factors such as drought.

Overview of the freight rail network  

2.80. Victoria’s freight rail system comprises 825 kilometres of standard gauge interstate network leased to the Australian Rail Track Corporation, and the 3,670 kilometre intrastate, non-urban rail network leased to V/Line Passenger (including 1,400 kilometres of combined passenger and freight network and 2,270 kilometres of freight-only network). There is an established network of intermodal terminals on Victoria’s freight rail network, located at Horsham, Mildura, Wodonga, Warrnambool, Ballarat, Shepparton, Morwell, Donald, Boort, Bairnsdale, Laverton, Altona and Somerton. These terminals allow freight to be moved by rail and then transported a relatively short distance by road to its destination. These intermodal terminals typically handle grain and containerised freight.  

2.81. Freight rail was government owned and operated until 1999, when V/Line Freight (later known as Freight Australia) was sold to Rail America for $163 million. At the
same time, the track (3,764 route kilometres plus 454 kilometres of lines not in use) was leased to the new owner for three consecutive periods of 15 years, with a presumption of renewals beyond that.\textsuperscript{73} At the time of sale, V/Line Freight revenue was around $118 million on a freight task of 6 million tonnes. The business employed around 750 staff and earnings before interest and taxes (EBIT) was around a $5 million loss.\textsuperscript{74}

2.82. The privatised freight railway made improved and increasing profits for the first three years. It then suffered losses as its strong reliance on grain was exposed by a sustained drought. Rail America sold the track and rolling stock to Pacific National in 2004 for $285 million.\textsuperscript{75} In May 2007, the Victorian Government ‘bought back’ the lease of the regional rail network for $133.8 million.

2.83. Over recent years, the length of interstate freight trains has increased from 1,500 metres to 1,800 metres, while the permissible axle load has increased to 21 tonnes (and in some cases, up to 23 tonnes). These changes have resulted in an increase in the productivity of interstate trains.\textsuperscript{76} On the other hand, the standards for Victorian intrastate regional freight trains have not improved since the 1970s. Regional freight trains are typically less than 1,000 metres long and operate at only 19 tonne axle loads. This restricts their productivity and viability compared with road transport, which has advanced considerably over the past three decades.\textsuperscript{77} Although handling longer, heavier freight trains presents various challenges to rail and terminal infrastructure, these challenges will need to be addressed to achieve productivity improvements on the intrastate network.\textsuperscript{78}

2.84. It is recognised that the freight-only rail network has deteriorated over recent decades. However, the freight network has benefited from substantial investment in recent years, resulting from the ‘buy back’ of the Victorian intrastate rail network lease, the commencement of key rail projects by the Victorian Government (in cooperation with the Australian Government and the Australian Rail Track Corporation) and the implementation of the Victorian Rail Freight Network Review recommendations.

Freight volumes and growth

2.85. Since 1995, the freight handled by the Victorian freight and logistics industry has grown at around 5 per cent per year.\textsuperscript{79} Victoria’s total freight task has reached 560 million tonnes across all modes, with over 12 billion tonne kilometres of freight moving within metropolitan Melbourne each year. Currently, road trucks carry 89 per cent of the freight in Victoria by volume. Sea and rail represent 9 per cent and 2 per cent, respectively, while air freight moves only 0.1 per cent of the task in tonnes.\textsuperscript{80}

\begin{itemize}
\item Satisfactory adherence to the access regime is the main criterion to be met for each 15-year renewal. There are no obligations on track maintenance other than for certain lines used by country passenger trains.
\item ibid., xi.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\item ibid.
\end{itemize}
Intrastate rail freight remains a less favoured option for a number of reasons: it is not cost competitive with road; it lacks the distribution networks to allow for point to point delivery; and it has low turn-around times. Interstate movements account for 93 per cent of rail freight, with intrastate rail freight making up the remaining 7 per cent.

The Victorian Freight Network Strategy predicts that by 2020, freight volume across all transport modes will increase by 47 per cent. By 2030, the freight task will almost double, with the Port of Melbourne handling nearly seven million containers each year, with a 57 per cent increase in the number of ships visiting the port.\textsuperscript{81}

Victoria's interstate rail freight task has been growing at 2.3 per cent per year since 1972. As improvements are made to Australian rail corridors, interstate rail will continue to be a viable alternative to interstate road transport.\textsuperscript{82} The Melbourne to Sydney freight corridor is the most significant inter-capital freight corridor in the nation, and significantly larger than any other corridor to and from Melbourne. The efficiency of this corridor is crucial to the Victorian economy. Currently, rail's average share of freight traffic in this corridor is around 7 to 8 per cent. Annually, 11 million tonnes of freight are handled on the corridor, and the future freight task is expected to grow to more than 18 million tonnes per year by 2020.\textsuperscript{83}

The Victorian Freight Network Strategy

The Victorian Government commissioned a review of the Victorian freight network in 2007. The review provided a plan for the revival of rail freight, with recommendations to address access pricing, infrastructure investment and a number of regulatory and institutional issues. It recommended that access fees be reduced in order to improve the viability of above rail operations and to provide an incentive for industry to commit to rail.\textsuperscript{84} It also recommended major investment in rehabilitation of the network, based on a hierarchy of 'platinum', 'gold', 'silver' and 'bronze' lines.

The Victorian Government's response to the Victorian Freight Network Review was outlined in Freight Futures. The key goals of Freight Futures are to: maintain and improve the efficiency of the freight network; ensure the availability of sufficient capacity in the freight network to handle the growing freight task; and enhance the sustainability of the freight network.\textsuperscript{85} Rehabilitation of lines will occur as follows:

- Platinum (the base network): This track will be maintained by virtue of being part of the V/Line passenger network, the Australian Rail Track Corporation interstate network or the declared AusLink network (which includes the Mildura line).

- Gold: These line sections are the first priority for rehabilitation and restoration to original track standard. In addition, the Australian Rail Track Corporation will restore the Maroona to Portland line, which it has leased from the Victorian Government.
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- Silver: Based on undertakings from the grain industry to secure train capacity and improve silo loading facilities, the Victorian Government will upgrade silver lines including standardisation of the Benalla to Oaklands line.

- Bronze: As part of the Green Triangle Freight Action Plan, selected bronze lines will be rehabilitated.\(^{86}\)

**Conclusion**

2.91. The rail industry supports social connectedness and the competitiveness of local, state and national economies by providing urban, inter-urban, regional and interstate freight and passenger services. The industry’s future development is of strategic significance to Victoria and is, in turn, connected to and supported by a number of related industries.\(^{87}\)

2.92. It is therefore essential that Victoria has a highly skilled rail workforce that is ready to respond to continued growth and other challenges within the industry. The first step in achieving this is to define the skill needs in the industry and identify any current or potential shortages in these skills. Governments and industry must respond to this information with detailed workforce planning strategies that will ensure the necessary knowledge and skills are available to the industry now and in the future.

\(^{86}\) ibid., 55.