TRANSPORT

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◤ OVERVIEW

How we move, and how efficiently we can do it, is key to ensuring productivity and quality of life.

Queensland's transport network spans 33,367 km of state-controlled roads, over 6,560 km of state managed heavy rail, 21 ports, over 20 km of light rail and 29 km of busways.[37] Our network has developed as our cities and regional areas have grown. Passengers and freight are now able to move via railways, busways, ports, airports, ferry connections, cycleways and many other connections.

Emerging technologies and new service models will enable us to further shape our transport system and meet growth in service demand. Innovations such as on-demand transport, cooperative and automated vehicles and Mobility as a Service can enhance the state's established modes and help us embrace new ways of transporting people and goods. Digitalisation of infrastructure and utilisation of smart transport systems will also provide opportunities to enhance the delivery, management and operations of the transport network.

These innovations complement how transport infrastructure can reduce emissions. Facilitating the shift to zero emission vehicles and promoting more efficient modes for people and goods, including greater use of buses and rail networks is underpinned by transport infrastructure. We will do this while ensuring our freight systems are resilient, safe and better integrated. The COVID-19 pandemic highlighted the importance of the supply chain and free-flowing movements, as the industry supported emergency responses. Integrated road, rail, air and port systems support Queensland's economic performance.

Queensland's transport network is vast and supports expansive regions and cities. Maintaining our transport infrastructure asset is a challenge, particularly given this scale as well as increasing user demands and disruptive weather impacts across the state. Investing in maintenance of our existing transport infrastructure is essential, not only to provide safe and efficient travel today, but to ensure the future economic sustainability of our state. This includes assets such as shipping channels, which are vital to the successful operation of our ports. The growing impact of climate change means that maintenance of our assets becomes even more critical.

Building-in resilient infrastructure assets can provide a greater level of protection so they remain accessible for transport networks in response to more frequent extreme climate events.

Providing access to employment and training, education, health, and essential services underpins the function of Queensland's passenger transport system. We work with our delivery partners to provide an accessible, integrated, and efficient network across rail, bus, tram, and ferry services, for all users.

Along with the Brisbane 2032 Games, the $5.4 billion Cross River Rail project is the Queensland Government's highest priority infrastructure project. Together with new high-capacity signalling, Cross River Rail will revolutionise the South East Queensland rail network, paving the way for future rail and bus projects and expansions to the passenger transport network.

As Queensland's population grows, the increased demand on our transport network will need to be balanced with placemaking and the everyday activities that occur in and around our road network and infrastructure. This balance is essential for creating attractive, sustainable, and healthy places, where neighbourhoods are not isolated or disconnected from the services that enable them to flourish. The Queensland Government is working to support placemaking and to integrate land-use and transport planning.

Queenslanders are utilising active forms of transport such as walking and cycling more than ever before, in response to population growth pressures, a desire to reduce emissions and the health impacts of physical inactivity.[38] The Queensland Government is working with other levels of government and industry partners to ensure our communities are green, liveable and walkable.

Transport has a unique role in the state's ongoing economic recovery from the COVID-19 pandemic as it supports almost all social and economic activities. An accessible, sustainable, and efficient transport sector reduces the cost of doing business, which supports a stronger Queensland economy.

Current key initiatives

▼ **The Transport Coordination Plan 2017–2027**

Provides a framework for the coordinated planning and management of transport in Queensland.

▼ **The Queensland Transport Strategy**

Harnesses emerging transport trends to move people and products safely and efficiently.

▼ **Queensland Road Safety Strategy**

Delivers a more holistic approach to road safety.

▼ **Regional Transport Plans**

Defines priorities and actions for developing Queensland's transport system that will guide future investment over the next 15 years.

▼ **The Queensland Freight Strategy**

Sets a shared vision for the state's freight system, outlining commitments to guide policy, planning and investment decisions.

▼ **Accessibility and Inclusion Strategy**

Articulates the Department of Transport and Main Roads' (TMR's) commitment to become a world leader in the provision of accessible and inclusive transport services.

▼ **Queensland Cycling Strategy 2017–2027**

Sets the direction for encouraging more people to ride bikes, more often throughout Queensland.

▼ **Queensland Walking Strategy**

Recognises the critical role that walking plays as part of a single integrated transport system accessible to everyone and as part of a healthy, active lifestyle for all Queenslanders.

▼ **Pacific Motorway M1 Upgrade Program**

The upgrade and widening of the Pacific Motorway M1 is being delivered in strategic priority stages as funding becomes available, based on traffic volumes and best value for money.

▼ **Cooperative and Automated Vehicle Initiative**

The introduction of a Cooperative Intelligent Transport Systems (C-ITS) pilot on roads in and around Ipswich to build community engagement and public awareness about automation, and to grow the state government's technical readiness.

Haughton River Floodplain Upgrade Project (Source: Department of Transport and Main Roads)

The *Bruce Highway Upgrade* program delivering **$13 billion** of works over a 15-year period from 2013–14 to 2027–28

Queensland's state-controlled road network spans **33,367 km** and has a gross replacement value of $78.15 B (as at 30 June 2020)[39]

Queensland Rail is responsible for **6,560 km** of rail track across the state[40] while Aurizon operates and manages 2,670 km of the Central Queensland network[41]

Passenger transport services in Queensland operate across **6,058 km** of rail, **20.3 km** of light rail, **29 km** of dedicated busways (SEQ) and includes more than **32,600** park 'n' ride spaces[42]

Coal train, North Queensland

TRENDS

1009 MILLION TONNES OF FREIGHT was moved on the transport network in 2019-20[43], this is expected to increase more than 20 per cent over the next decade[44]

356.8 MILLION TONNES OF CARGO[45] valued at $113.25 billion, moved through Queensland's 21 ports in 2019–20[46]

32 PER CENT INCREASE IN TRANSPORT EMISSIONS between 2005-2019, currently approximately 23.6MtCO2-e[47]

MORE THAN **163 MILLION PASSENGER TRANSPORT TRIPS** were provided across Queensland in 2019-20[48]

CYCLING 5 KM TO AND FROM WORK EACH DAY instead of driving would save about 720kg of greenhouse gas emissions per year – 5 per cent of the average Queensland household's greenhouse emissions

ALMOST HALF OF QUEENSLANDERS WOULD LIKE TO WALK MORE[49] and 75 per cent of parents want their kids to be more active[50]
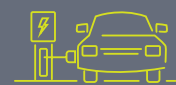
31 QUEENSLAND ELECTRIC SUPER HIGHWAY FAST CHARGING LOCATIONS the majority of which are powered by green energy, and saved between 455 and 534 tonnes in tailpipe emissions[51]

◥ CASE STUDY

Mobility as a Service

New services and technologies provide exciting possibilities for innovative transport services and modes. TMR is exploring opportunities to harness emerging technologies and new service models to improve the use of existing roads and transport systems. Personalised transport services have grown in popularity due to the proliferation of smartphones and ready access to data. Mobility as a Service (MaaS) schemes that integrate public and private transport services into a single fare often as part of a subscription service are increasing in popularity and demand.[52]

TMR and the University of Queensland (UQ) as part of an iMove Cooperative Research Centre program have commenced a joint proof of concept to explore how MaaS schemes can enhance personal mobility locally. The trial uses emerging technology to test elements of MaaS with a group of UQ staff and students.

The application of MaaS schemes has the potential to make certain modes more attractive for users in the face of competition from new and future transport modes that may adversely affect the transport system, primarily through increased congestion.

Options such as on-demand transport are a mode that can be included in MaaS. TMR's Demand Responsive Transport (DRT) trial in Logan is an example of an integrated public–private transport service, with local taxis connecting commuters to public transport services that is provided as an on-demand transport option. DRT Logan is a flexible shared transport option, designed to bring together people who live near one another and want to travel at the same time in places or at times when buses and trains aren't available. With DRT you can pre-book a vehicle to pick you up near your home and take you to selected local shopping and community facilities and transport hubs such as your local bus or train station.[53]
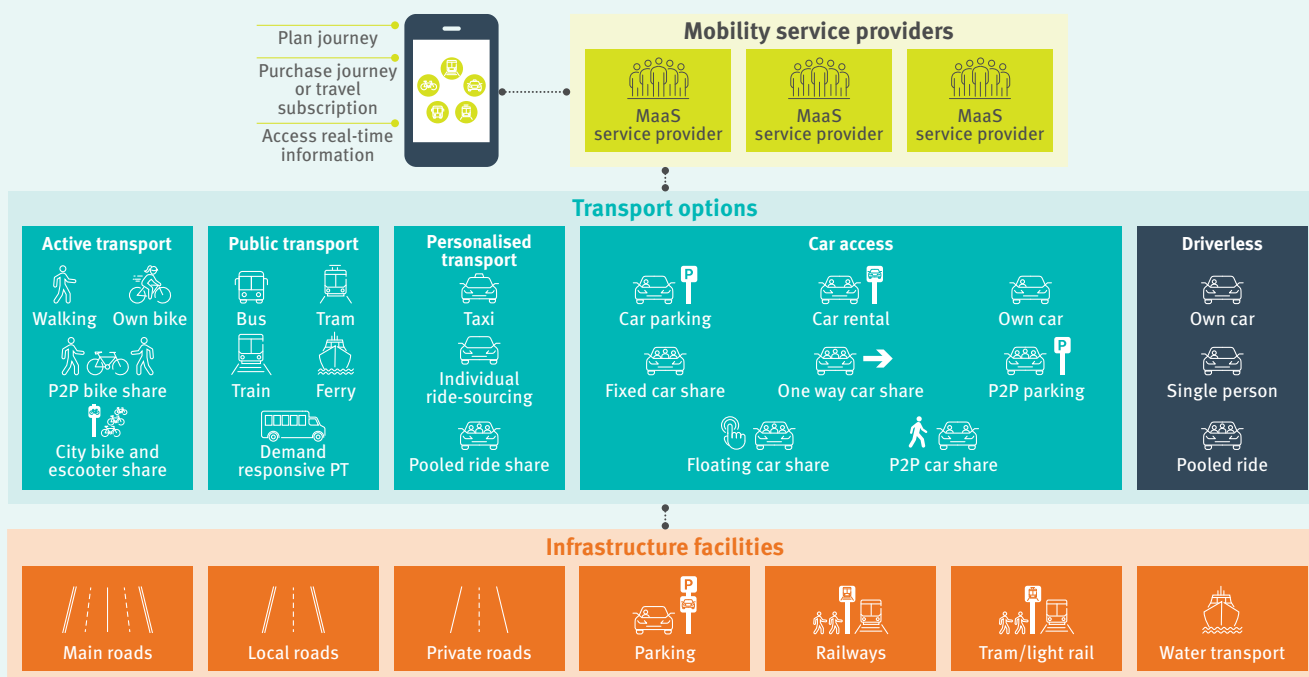
Overview of Mobility as a Service (Source: Modified from MaaS Australia)

TRANSPORT

Network security and resilience

Queensland is Australia's most disaster-affected state exposed to the impacts of extreme weather and climate change. As the climate continues to warm, extreme weather events are likely to be more damaging and create greater disruption across the transport system. Queensland's transport network also needs to be secure and resilient to human induced threats, addressing disruptions and damage quickly and thoroughly. The transport system, like all areas of the Queensland economy, must plan, prepare and build in resilience so that when events do occur it can reopen faster and at least cost.

Freight on rail

Maximising rail freight use along strategic corridors can deliver improved economic, social and environmental benefits. The Queensland Government recognises that the freight task operates in a competitive and complex environment. Modal choice is determined by a variety of factors including reliability, price, timeliness, type of goods, geographic circumstance and other economic and social factors. Investing in efficient and effective rail access is particularly important in Queensland's regional areas – the source of our resource and agricultural products.

Road safety

Road safety is a public health issue and continues to be a complex challenge in Queensland. Every crash, serious injury, and fatality on the network has a ripple effect that impacts individuals, families and communities. The Queensland Government has a strong history of taking action to improve road safety. Over time, progress has been made through interventions such as the introduction of seatbelts, enforcement initiatives including the rollout of Australia-first cameras that detect if a driver is using their phone or not wearing a seatbelt, behavioural and cultural change programs, and improving roads and roadsides. However, to achieve our vision of zero road deaths and serious injuries we need to build on these foundations to implement a holistic approach to reducing road trauma. The challenge is to identify infrastructure and service solutions that can help us realise the vision of zero deaths and serious injuries across the transport network.

Journey times and freight efficiency

As our cities and regional centres grow, journey times and reliability can be affected. This impacts the entire network and the wider economy through increased freight costs and liveability as commuting times grow. The Queensland Government continues to proactively manage congestion and integrate the operations of the road transport network to improve journey reliability for customers. Knowledge-sharing about current and future system requirements across the freight supply chain could also provide insights into the day-to-day working of the freight system to better identify potential issues, innovative solutions and ensure investments are driven by need.

◥ OPPORTUNITIES

Environmental sustainability

Transport infrastructure can directly reduce emissions through the use of low or zero carbon material, the increased use of recycled material and the sourcing of renewable energy to power our transport system. Supporting low and zero emission vehicles and vessels for personal, commercial and freight use, encouraging greater adoption of passenger transport services and active transport options, such as riding bicycles or e-bikes and walking will help reduce transport greenhouse emissions. As technology and new services such as shared connected and automated vehicles develop, the reduced number of vehicles on our roads and efficiency gains in service delivery can also help lower green house gas emissions. Long-term planning and improved environmental practices at ports are also assisting in securing the long-term health and resilience of the maritime environment including the Great Barrier Reef.

Brisbane 2032 Games

The Brisbane 2032 Games provides a unique opportunity to deliver sustainable, accessible and inclusive transport infrastructure across the state, improving access across South East Queensland and other host cities and towns. There are opportunities to build on the benefits of Cross River Rail's legacy of increasing the region's rail capacity, reducing travel times for commuters and visitors and improving the passenger experience through more reliable and frequent services.

Delivery of an integrated, accessible and inclusive transport network (products, services, information and infrastructure) demonstrate Queensland's commitment to upholding everyone's human rights, creating a legacy of dignity for all.

Increased connectivity and accessibility

Inclusive, active and healthy communities need employment and everyday services to be accessible for all. Improving digital connectivity can minimise the need to travel, while improving our integrated transport and land-use planning to support placemaking and applying universal design principles to our public spaces provides more opportunities for people to continue to use more active modes in their local neighbourhood. Enabling integrated journey planning, information and payments makes using public transport easier, while more on-demand, convenient and seamless interchanging will result in a world-class network that helps Queenslander's access services when and where they want.

Use technology to improve mobility

Introducing new services and technology will improve access and connectivity in our regional centres and cities across Queensland. More efficient-running and new technologies, such as drones, delivery bots and automated vehicles, can help make better use of existing road capacity, improve access, and reduce first and last-mile freight costs by up to 40 per cent.[54]

TRANSPORT

Encourage jobs, growth and productivity

Develop regions, places and precincts

Enhance sustainability and resilience

Adopt smarter approaches

1 Improved freight reliability and efficiency (DTMR)

Continue to work collaboratively to deliver an integrated, resilient, and safe freight system to support the Queensland economy and community which links communities, local industry, regions and Queensland to the rest of Australia and internationally. Optimise use of existing freight infrastructure and targeted investment, creating economic opportunities which advance customer, industry and government interests, now and into the future.

2 SEQ rail network and faster rail (DTMR, QR)

Continue to enhance and optimise the South East Queensland rail network to deliver faster, more efficient and reliable journey times across the network, as well as support faster rail outcomes along strategic corridors between Brisbane and the Gold Coast and Sunshine Coast. This will build on the benefits offered by Cross River Rail and help prepare the network for increased demand.

3 Incentivising low and zero emission Transport solutions (DTMR)

Provide appropriate policy and infrastructure to support greater uptake of zero-emission vehicles and shift to more efficient modes. Embrace innovative and new transport technologies, and combine research and development to build, strengthen and integrate Queensland's transport system. Reducing emissions in the transport sector will support new industries, skill development, and create more sustainable jobs.

4 Queensland Electric Super Highway (DTMR)

Continue to expand the Queensland Electric Super Highway across the state in partnership with local governments and industry to ensure increased access for Queenslanders to electric vehicle charging infrastructure.

5 Reduce transport emissions (DTMR, QR, Ports)

To reduce transport infrastructure's environmental impact and whole-of-life greenhouse gas emissions:

- ▼ Embed sustainability into decision making for project planning, design, construction and operation
- ▼ Undertake sustainability assessment for all infrastructure projects with budgets exceeding $50 million
- ▼ Explore opportunities to re-use waste materials, such as for earthworks and drainage construction, as well as crumbed rubber in road construction.

6 Network security, resilience and sustainability (DTMR, QR, Ports)

Improve transport network security and resilience to the impacts of climate change and disruptions from all hazards, including natural disasters and human induced threats, to enable safe movement of people and goods. Research and invest in sustainable materials to improve recovery and reconstruction activities. Improve planning, design, delivery and operations to incorporate risk related to natural disasters and climate change impacts.

7 Movement and place framework (DTMR, DEPW)

Develop a movement and place framework in partnership with the Queensland Architect to guide a 'place-based' approach to the planning, design and operation of Queensland's transport network, alongside informing the delivery of transport precinct development outcomes.

8 Sustainable and healthy transport options (DTMR)

Support liveable and sustainable transport options through the implementation of the *Queensland Walking Strategy 2019–2029* and *Queensland Cycling Strategy 2017–2027*.

9 Coordinated transport and land use (DTMR, DSDILGP)

Leverage significant transport infrastructure projects such as Cross River Rail to develop transit-oriented developments around stations or road infrastructure that supports housing diversity, social inclusion, enhanced environmental outcomes and ensure that such projects can grow and adapt to evolving needs.

10 Improved road safety (DTMR, QPS)

Deliver innovative initiatives focused on the whole-of-life approach to transport safety to improve overall transport network safety. Employ new technologies that can improve safety including connected and automated vehicles or 'Hold the Red' an active collision prevention system.

11 Operational efficiency (DTMR)

Use technologies such as the next generation traffic signal controllers (NGTSC), Smart Motorways, and LED lighting to enhance operational efficiency, improve network capacity and reduce operating costs.

12 Seamless personalised journeys (DTMR)

Continue to partner with industry and other levels of government to investigate opportunities for seamless personalised travel using MaaS, increasing access to on-demand transport and improving transfers between different forms of transport across Queensland.

13 Rail network safety and efficiency (DTMR, QR, CRRDA)

Progressively deliver the European Train Control System (ETCS) to improve safety, capacity and efficiency of the rail network. The ETCS is an advanced signalling system that relays continuous information between the train and central Rail Management Centre via a radio system, trackside technology and onboard equipment.

14 Regional rail performance (DTMR, QR)

Continue to upgrade the North Coast Line to improve regional rail performance and enhance passenger and rail freight movements.

15 Cooperative and Automated Vehicles (DTMR)

Continue to prepare the technical foundations for the next generation of smart transport infrastructure to provide safety, mobility and environmental benefits on the transport network through the Cooperative and Automated Vehicle (CAVI) initiative.

16 Convenient and attractive active transport (DTMR)

To encourage active transport and other sustainable travel choices, deliver:

- safe and connected cycle paths and footpaths
- integrated public transport, walking, cycling and other networks
- networks that are accessible for people of all ages and abilities
- more inclusive, active and healthy communities.

17 Bruce Highway upgrades (DTMR)

Continue to improve safety, flood resilience and capacity along the Bruce Highway between Brisbane and Cairns by ongoing implementation of the Bruce Highway Upgrade Program.

18 Port network management (DTMR, Ports)

To further optimise the Queensland port network, facilitate trade and drive economic growth by:

- increasing the efficiency and effectiveness of port services and infrastructure
- improving connectivity and access to help our regions connect with the world
- driving safety, environmental best practice and sustainability of port operations and development to create a positive change in the communities where they operate.

19 Inland Rail (DTMR, QR)

Connect producers to market and create new opportunities to deliver freight to markets between Melbourne and Brisbane and beyond to global markets by continuing to work with the Australian Government to maximise the benefits of Inland Rail for Queensland.

20 Planning for the Brisbane 2032 Games (DTMR, 2032 Taskforce)

Plan to deliver sustainable transport infrastructure across the state which provides improved access across South East Queensland and other host cities and towns providing an ongoing legacy for the community.

21 Supporting Tourism (DTMR, DTIS)

Continue to incorporate evidence-based tourism priorities in the planning and investment of transport infrastructure and services to improve access and drive real growth in tourism opportunities and jobs.

22 Freight Rail (DTMR, QR)

Work with rail and supply chain stakeholders to increase the use of regional rail corridors (South West, Central West, Mt Isa and North Coast Lines) to improve road safety, reduce road transport emissions and reduce the road maintenance burden.

23 Decision making in an uncertain future (DTMR)

Continue to undertake and improve policy development and transport modelling capacity and capability to assess how new transport service models, such as shared vehicle use, can help achieve the desired strategic transport outcomes as new technologies such as autonomous vehicles become a reality.

24 Creating Better Connections for Queenslanders (DTMR)

Delivery of *Creating Better Connections for Queenslanders* – a 10-year plan for Queensland passenger transport focusing on providing reliable and frequent services to move large numbers of people quickly and easily on the busiest corridors in our towns and cities, delivering infrastructure, services, and technology improvements.