

Greater Sydney

Draft Services and Infrastructure Plan

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About this plan

The Draft Greater Sydney Services and Infrastructure Plan sets a 40 year vision for transport in the Greater Sydney Region, its role in both shaping the city and enabling mobility, and responds to the changes that are transforming our city and our customers' needs. Our aspiration for Greater Sydney is to support the growth of our city, whilst maintaining the liveability for Sydneysiders, and sustaining and enhancing Sydney's role as a global city and harnessing technology for the benefit of customers.

The land use and transport vision for Sydney

A metropolis of three cities

In response to forecast growth and to help shape Sydney's future, the Greater Sydney Commission (GSC) has developed a strategic land use plan for the city. The land use vision for Greater Sydney is a metropolis of three cities, providing convenient access to jobs and services for people across the city.

The cities include the Eastern Harbour City with the established Harbour CBD and economic corridors, the Central River City anchored by Greater Parramatta and the Olympic Peninsula (GPOP), and the emerging Western Parkland City focussed around the Metropolitan City Cluster of Western Sydney Airport-Badgerys Creek Aerotropolis, Greater Penrith, Liverpool and Campbelltown-Macarthur.

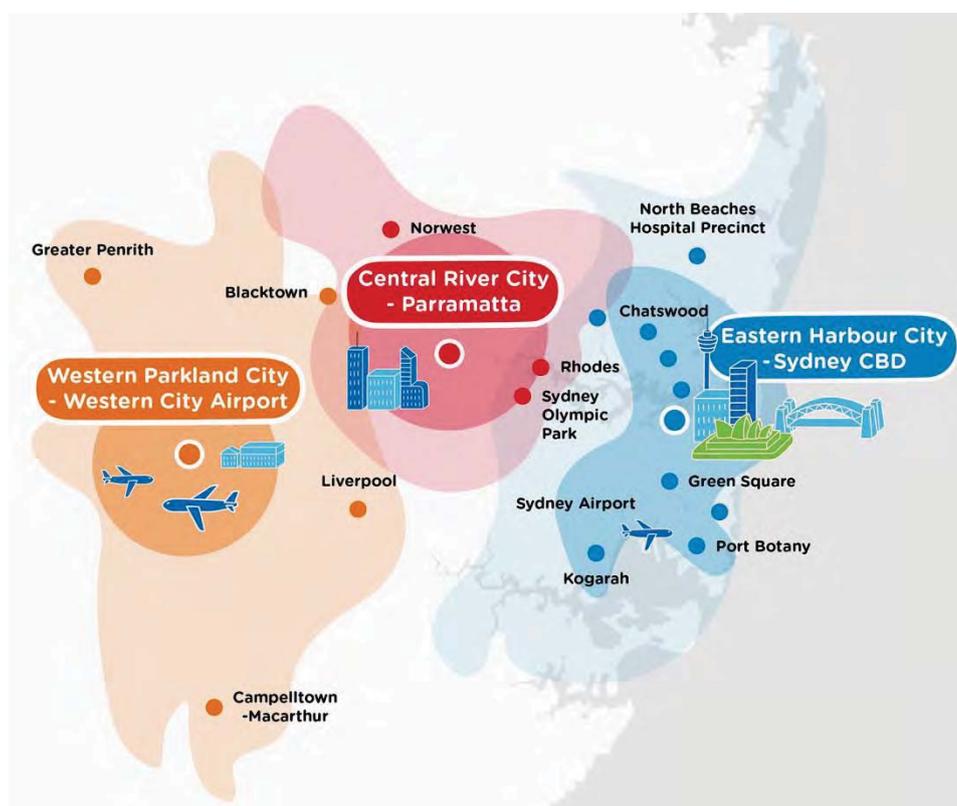


Figure 1 Vision for Greater Sydney as a metropolis of three cities

The 30 minute city

The vision for Greater Sydney is one where people can conveniently access jobs and services. The 30 minute city is a guiding principle that provides people with access to education, jobs and services within 30 minutes by public transport regardless of where they live. This means people can reach their nearest Metropolitan and Strategic Centres within 30 minutes 7 days a week.

It is based on established research that indicates that if people are required to travel more than 90 minutes a day, it impacts on quality of life and the liveability of a city

The Greater Sydney Commission's Region Plan establishes the vision for Greater Sydney as a 30 minute city. As the city transitions to a metropolis of three cities, convenient and reliable access for customers by public and active transport to their nearest centre is increasingly important for:

- Productivity –reducing the time people spend travelling and increasing people's access to jobs and business' access to workers
- Liveability– improving the quality of life in Greater Sydney by reducing the need for long commutes and helping to manage congestion by better spreading transport demand
- Sustainability– increasing the share of trips by public and active transport and reducing the need to drive or reducing average journey lengths, thereby reducing emissions and improving air quality

There are two components to the 30 minute city:

- Connecting people in each of the three cities with jobs and essential services in their nearest Metropolitan City Centre. These are the largest employment and service centres in each of the three cities – the Harbour CBD in the Eastern Harbour City, Greater Parramatta in the Central River City and WSA –Badgerys Creek Aerotropolis in the Western Parkland City.
- Connecting residents in each of the five districts to one of their Strategic Centres by public and active transport, giving people 30- minute access to local jobs, goods and services. Strategic centres are major centres for transport, health and education, such as Chatswood, Norwest and Liverpool. Each City contains multiple Strategic Centres, boosting local economies and providing jobs and services close to where people live

The 30 minute city has important implications for transport. In planning transport services and infrastructure, we must consider how customers can conveniently reach their nearest Metropolitan or Strategic Centre within this time frame.

To support this service outcome we will improve journey times on public transport through a range of initiatives, including:

- Demand management initiatives to encourage customers to change their behaviour and travel at different times of day. For example, the Travel Choices Program has been successful in encouraging customers to retime their travel to and from the Harbour CBD, reducing crowding and delays on peak services
- Better use initiatives to optimise the capacity of our existing networks. For example, we will allocate road space on the basis of prioritising the efficient

movement of people and goods, which means better bus priority to improve the reliability and journey times of bus services

- New capacity initiatives. We will invest in new busways and rail links to improve journey times on trunk corridors that connect to centres. Combined with 5 minute interchanges and more frequent services, this will make journeys faster for both those living on these corridors as well as those in adjacent areas
- Policy and service initiatives, including more frequent services

The overarching policy and investment approach

Service & Infrastructure Initiatives – a flexible, agile investment approach

We are planning to improve the outcomes of our customer's journeys through a range of initiatives extending across the 40 year timeframe of Future Transport, including both policy and service improvements as well as infrastructure improvements. These include initiatives that the NSW Government has committed to (over the next 10 years), initiatives for investigation (in the 0-10 year and 10-20 year timeframes) and visionary initiatives (in the 20+ year timeframe) that will be considered in the future.

With a forecast population of 8 million by 2056, Greater Sydney will require new transport infrastructure capacity to allow the city to grow whilst maintaining liveability. This includes new transport links or significant upgrades to existing transport links. All identified initiatives are subject to detailed feasibility studies, business cases and funding.

The vision for the transport system

A better integrated transport system

Safe, efficient, reliable and easy-to-understand transport is crucial to supporting the productivity, liveability and sustainability of our city. This will require an integrated transport system that safely, efficiently and reliably carries more people and goods that are undertaking a range of different journeys, including journeys across our three cities, journeys within them as well as local journeys.

Efficient and reliable public transport relies on designing our services and infrastructure to reliably provide customers with more efficient journeys through:

- A network that provides convenient access to where people live and work based on integrated land use and transport planning
- Frequent services that minimise the time customers need to wait
- Policies that support the prioritisation of more efficient modes of transport on the road network
- Better use of existing infrastructure and investment in new infrastructure to boost capacity and improve journey times

Improved journey times through more frequent and better connected services

To encourage more Sydneysiders and visitors to use public transport and to support 30 minute access to the nearest centre, we plan to improve the frequency of services across Greater Sydney. Key to this objective will be Greater Sydney's trunk transport corridors, which form the backbone of our public transport network, connecting the Metropolitan and Strategic Centres. 'Turn-up-and-go' services are planned on both city-city and centre-centre corridors. This means that once customers reach their nearest main station or stop on a trunk corridor, they will not have to wait any longer than 5 minutes across the day and in the evenings.

For people living within ~10km of our Metropolitan Centres as well as on local corridors, customers will have access to high frequency services (at least every 10 minutes) that will enable them to reach their nearest Strategic Centre within 30 minutes or to connect to a nearby trunk corridor, where they can continue their journey.

On CBD mass transit and local corridors where high frequency services are not provided, on-demand services can offer a more efficient, personalised and effective way of serving customers by operating flexible routes and picking-up and dropping-off customers based on their requests.

Priority for on street public transport

Although the NSW Government is investing record amounts in new infrastructure, a growing population will also require us to better use the capacity we have. This will mean that on movement corridors, we will need to prioritise road space to most efficiently move people and goods. Improved bus priority will be essential to this. Buses use nearly 20 times less space to transport the same number of people than private cars (Source: UTIP), this is particularly key in road corridors with limited road space.

In a contrasting setting, we will provide and protect bus priority routes on major new road links as they are developed in the Western Parkland City. This will ensure high-quality public transport access to Western Sydney Airport – Badgerys Creek Aerotropolis and our growth areas to ensure equality of transport access and minimise the need for car ownership.

The importance of interchanges

Convenience and choice for customers

All public transport customers use interchanges or change transport modes as part of their journey, whether accessing the network, for example walking to their local bus stop, or transferring between services. Convenient transfers are therefore essential for improving the customer experience.

Interchanges also provide choice for customers by enabling more destinations to be reached from a single origin. For example, customers that transfer from a local bus to train have significantly more destinations available to them than a single service could efficiently provide.

Supporting our places

Interchanges also support the development of centres by acting as a catalyst for urban growth. As they provide access to different services, they attract people and jobs in the areas that surround them.

Integrating interchange and land use planning is essential for achieving this outcome as it provides opportunities to locate transit-supportive land uses close to transport nodes, establish pedestrian-friendly precincts and encourage centre renewal through integrated development.

Enabling the 30 minute city

The vision for Greater Sydney is to provide 30 minute access for residents to local jobs and services. It is a city where you can easily access the places you need to visit on a daily basis, no matter where you live.

Interchanges contribute to 30 minutes cities by:

- Attracting jobs and services at locations that have good public transport accessibility and travel choice across Sydney
- Improving customer travel times by connecting local feeder services with trunk corridors; and
- Expanding travel opportunities and providing more varied travel choices to jobs, services and recreational destinations

Interchanging will be required

In addition to improving access to jobs and services across Greater Sydney, the future network will also provide more choice for customers on destinations they can access by opening up interchange opportunities. It will also help reduce dependence on some of the busiest transport corridors in Greater Sydney – around the Harbour CBD – by reducing the need for customers to travel through Sydney CBD to access other parts of Greater Sydney.

The vision for the road network

More efficient ‘road space allocation’

To support the efficient movement of people and goods we will need to prioritise higher productivity vehicles (such as freight vehicles, buses), and active transport (primarily walking) in busy commercial centres.

TfNSW will develop and implement a Road Space Allocation Policy. The key principle will be to prioritise the efficient throughput of people and goods on movement corridors, requiring more priority for higher productivity vehicles such as buses and shared vehicles; and the development and implementation of a Greater Sydney Parking Guideline in collaboration with local government.

Improving the sustainability and liveability of Sydney through a 'Movement and Place' framework

The key principle of the Movement and Place Framework is to balance the efficient movement of people and goods with supporting the liveability of places on our road network

The Movement and Place Framework will form a future suite of technical documents that provides the framework for road planning and management based on a 'one integrated road network' approach. It identifies different street environments that have supporting functions, contributing to better places in our urban areas and more sustainable travel opportunities through considering the:

- movement needs of all our customers and the modes they use to travel; and
- places where our customers are starting and finishing their journeys

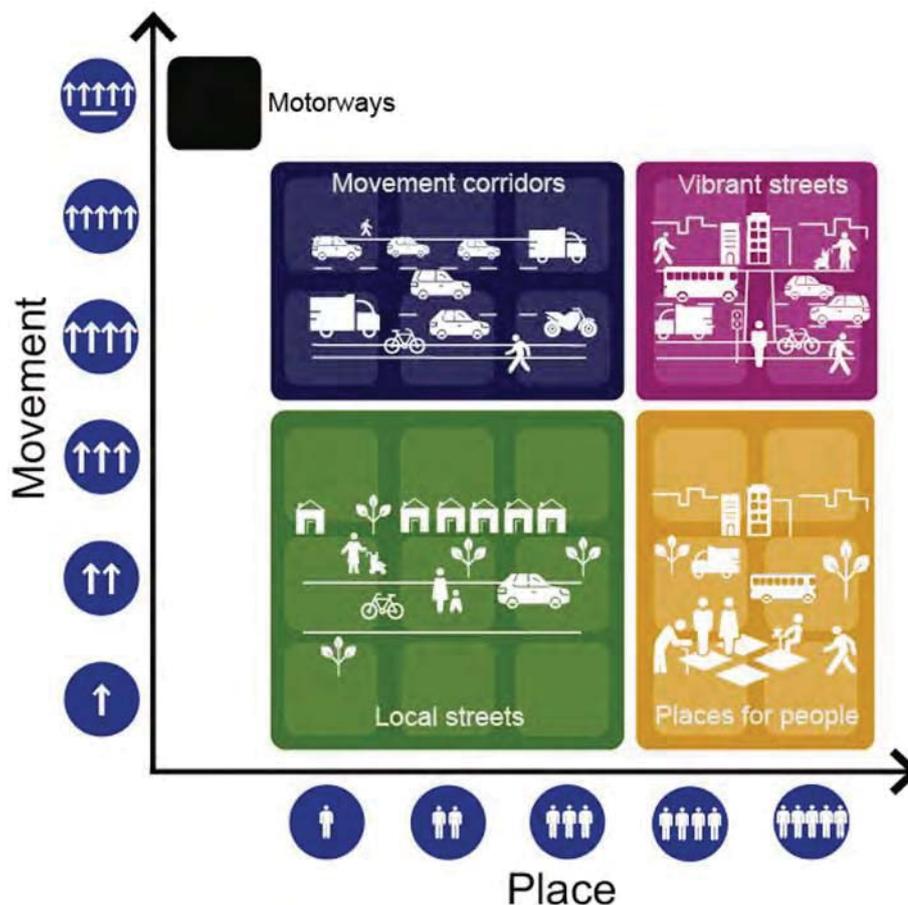


Figure 2 'Movement and Place' framework

Investment in motorways and tunnels

Why we invest in motorways and tunnels:

- Motorways are important city to city and centre to centre movement corridors
- Motorways move people and goods over long distances and, along with trunk public transport corridors, form part of the backbone of the Greater Sydney transport system
- They will continue to support journeys on trunk routes in Greater Sydney as well as journeys to and from regional areas
- Motorways linking with movement corridors on the outskirts of Metropolitan and selected Strategic Centres, support city to city and key centre to centre journeys
- The motorway network will have a particularly important function in supporting road freight travelling in and around Sydney. This will minimise amenity and safety impacts on places on local roads
- The function of motorways will evolve over the life of the plan, moving more towards a mass movement function for people and freight with increased automation.

Community engagement in Greater Sydney

Between 15 May and 15 July 2017, Future Transport sought feedback on its Future Transport Strategy from stakeholders across Greater Sydney and regional NSW.

The engagement was undertaken to **raise awareness and stimulate discussion** on the ideas and topics to inform the Draft Future Transport Strategy and the Draft Service and Infrastructure Plans.

The key issues which arose during consultation in Greater Sydney included:

- **Technology** - While some people expressed a view that it would be difficult to plan for emerging technologies, many felt it was important that NSW Transport maintain an active and adaptive approach to innovation to better facilitate change as it comes.
- **On Demand Services** - New approaches were raised such on-demand services and mini-buses offering flexible services shuttling between other transport modes.
- **Safety & Security** - People don't always feel safe around stations and on transport services, especially late at night. They would like to see continued improvement of security measures.
- **Addressing congestion and population growth** - When discussing their preferences for ways congestion could be managed people strongly preferred approaches that incentivised driving less, rather than those that penalised drivers (e.g. higher tolls). People are concerned about population increases and what this will mean for congestion in the future but not sure if larger roads were required or take up of new vehicle technologies would lessen the need for road infrastructure.

Engagement with a range of stakeholders and customers in Greater Sydney will continue until release of the final Future Transport 2056 in 2018.

1. Introduction

This section describes the purpose of this document, defines the Greater Sydney region and provides an overview of the objectives and customer outcomes for transport in Greater Sydney.

About the Draft Greater Sydney Services and Infrastructure Plan



Figure 3 Overview of Draft Future Transport 2056

- The Draft Future Transport Strategy 2056 sets the vision, state-wide directions and headline initiatives that will deliver the six outcomes.
- The Draft Services and Infrastructure Plans set the customer outcomes and identify the networks and initiatives required to achieve these, including policy, service and infrastructure initiatives.
- The Supporting Plans are more detailed issues-based or place-based planning documents that will support the implementation of Future Transport 2056.

Defining Greater Sydney

Greater Sydney is defined as the 33 local government areas of Bayside, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, Northern Beaches, North Sydney, Parramatta, Penrith, Randwick, Ryde, Strathfield, Sutherland, The City of Sydney, The Hills, Waverley, Willoughby, Wollondilly and Woollahra.

The geographic boundary is consistent with the Greater Sydney Commission's five districts within Greater Sydney - North, South, Central City, Eastern City and Western City Districts.

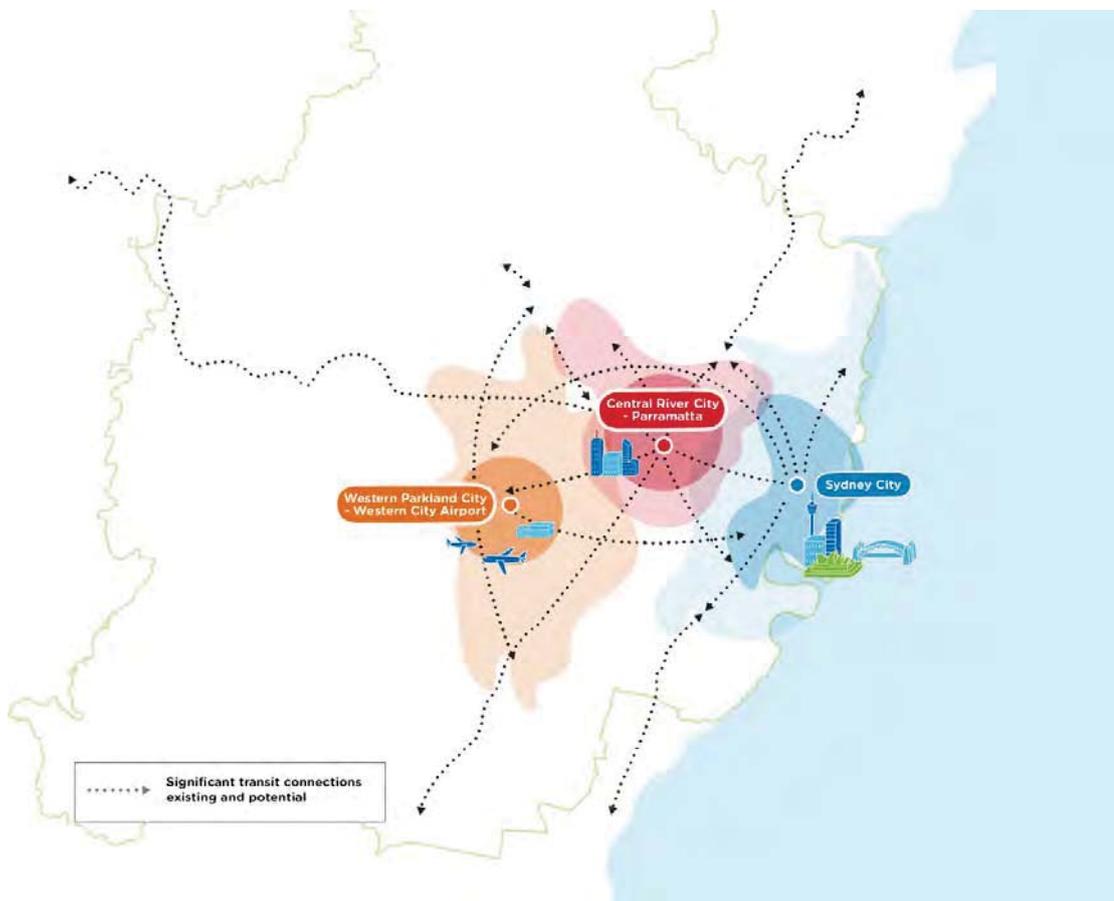


Figure 4 Geographic area of Greater Sydney

Overview of transport objectives and customer outcomes for Greater Sydney

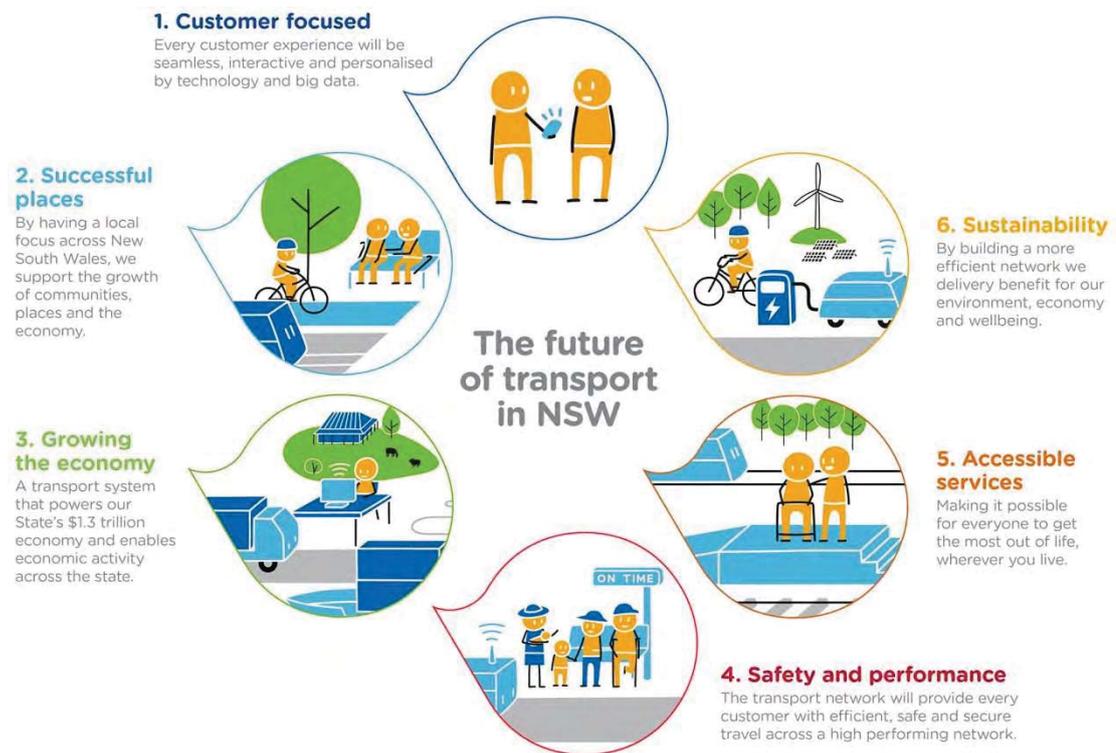


Figure 5 Future Transport 2056 – six customer and network outcomes for NSW

The six outcomes for Future Transport 2056 have been customised into objectives specific to Greater Sydney. These include:

Greater Sydney transport objectives:

1. Convenient and responsive to customer needs

Transport services will be convenient and responsive to customer needs. This means services will be integrated, customers will have comfortable journeys and we will harness new forms of mobility for the benefit of customers

2. Sustaining and enhancing the liveability of our places

The transport system will support the liveability of our places with a road network that supports movement and place functions and walking and cycling facilities around centres that make healthy transport choices attractive

3. Connecting people and places in a growing city

As Greater Sydney becomes a metropolis of three cities, the transport system will enable efficient access for customers to their nearest centre and enable mobility across the city. Faster journeys by public transport and easy interchanging will underpin this

4. Safely, efficiently and reliably moving people and goods

The most fundamental task of the transport system is to enable safe, efficient and reliable journeys for people and goods. This requires a network of services and infrastructure that is also easy to understand and delivers equitable access across the city

5. Accessible for all customers

Transport in Greater Sydney will be accessible to all customers. Stations, stops, wharves and transport services will meet accessibility regulations and deliver on the expectations of customers that require easy access

6. Makes the best use of available resources and assets

Transport services will be affordable for customers. The transport system will also be financially and environmentally sustainable through sound asset management and a network that is resilient and has a net zero emissions impact

From these six objectives, 12 customer outcomes have been developed for Greater Sydney. These include:

Greater Sydney customer outcomes:

1. New technology is harnessed to provide an integrated, end-to-end journey experience for customers
2. Future forms of mobility are made available to customers and integrated with other modes of transport
3. Walking or cycling is the most convenient option for short trips around centres and local areas, supported by a safe road environment and suitable pathways
4. Vibrant centres supported by streets that balance the need for convenient access while enhancing the attractiveness of our places
5. 30 minute access for customers to their nearest centre by public transport seven days a week
6. Fast and convenient interchanging, with walking times of no longer than five minutes between services
7. Efficient, reliable and easy-to-understand journeys for customers, enabled by a simple hierarchy of services
8. Efficient and reliable freight journeys supported by 24/7 rail access between key freight precincts with convenient access to centres
9. A safe transport system for every customer with the aim for zero deaths or serious injuries on the network by 2056
10. Fully accessible transport for all customers
11. Transport services and infrastructure are delivered, operated and maintained in a way that is affordable for customers and the community
12. A resilient transport system that contributes to the NSW Government's objective of net-zero emissions by 2050

2. Service and infrastructure initiatives

This section summarises the policy, service and infrastructure initiatives to support customer outcomes. These include initiatives that the NSW Government has committed to for delivery in the next 10 years, initiatives that are for investigation in the next 10 and 20 years and visionary initiatives beyond 20 years.

Overview

We will deliver the customer outcomes through a range of initiatives extending across the 40 year timeframe of Future Transport, including both policy and service improvements, as well as infrastructure improvements. These initiatives are indicative of the level of service required to achieve the customer outcomes and the vision set out for Greater Sydney. These include initiatives that the NSW Government has committed to (over the next 10 years), initiatives for investigation (in the 0-10 year and 10-20 year timeframes) and visionary initiatives (in the 20+ year timeframe) that will be considered in the future.



Figure 6 Initiatives to support the customer outcomes

A flexible, agile investment approach

Our investment approach is designed to be flexible, responding to change and uncertainty. The draft timeframes are indicative, based on preliminary evidence, of when potentially these initiatives may be need to be implemented or committed.

Further investigation of all initiatives in the Draft Strategy and Plans will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

Initiatives are listed in the following categories:

- **Committed initiatives (0-10yrs)** – initiatives that either have committed funding, are committed/ contractually committed, are for immediate detailed planning, or are part of key maintenance, renewal or safety programs. Some initiatives are subject to final business case.
- **Initiatives for investigation (0-10, 10-20yrs)** – intended to be investigated for potential commitment or implementation within the next 20 years. Those listed in 0-10 horizon will be prioritised for more detailed investigation to determine if they are required in the next decade.
- **Visionary initiatives (20+ years)** – longer term initiatives that may be investigated within the next 10 years, but are unlikely to require implementation within 20 years.

Sydney-wide initiatives

Policy / planning initiatives

Committed initiatives (0-10 years):

- Transport Access Program (TAP) which provides accessibility upgrades to stations, stops and wharves
- Expansion of Travel Choices Program to other congested corridors and centres. This program encourages customers to change when or how they travel, consistent with their journey objectives, in a way that enables us to better use the current transport capacity.

Initiatives for investigation (0-10 years):

- Implementation of the Movement and Place Framework for planning, designing and operating roads in collaboration with local government. The key principle will be to balance the efficient movement of people and goods with supporting the liveability of places on our road network
- Development and implementation of Road Space Allocation Policy. The key principle will be to prioritise the efficient movement of people and goods on transport corridors, requiring additional priority for higher productivity vehicles such as buses and shared vehicles
- Development and implementation of a Greater Sydney Parking Guideline in collaboration with local government. The key principle will be ensuring parking availability takes into account the level of access provided by public transport.
- Implementation of road network planning and development strategies that include road safety principles for all users to support the attainment of NSW Government road safety targets
- Development and implementation of policy and regulatory framework to manage the safe introduction of Assisted Mobility Devices that considers advancing technology and automation
- Development and testing of new approaches to encourage walking and cycling, especially for school age children
- Development and implementation of an integrated provision policy to ensure walking and cycling is provided for, where appropriate as part of new and upgraded road, rail, bus and transport interchange projects
- Collaborating with industry to effectively integrate Connected and Autonomous Vehicles (CAVs) into the transport network through a number of specific initiatives. The key principle will be to harness the safety and efficiency benefits of CAVs while ensuring pedestrians and more sustainable transport is prioritised in centres
- Consideration of incentives to further encourage more customers to travel in off-peak periods

- Development and implementation of the Last Mile Freight Policy in collaboration with industry to encourage more freight movements in centres to take place outside of normal business hours.
- Improving safety for customers across Greater Sydney by ensuring all transport investments meet 4-5 star safety outcomes and all road infrastructure investments support Level 4 or 5 automated vehicles.

Service initiatives:

Committed initiatives (0-10 years):

- Introduction of higher frequency public transport services on selected corridors
- Investment in the 'More Trains, More Services' program includes 24 brand new air-conditioned suburban trains and extra services across the train network.
- Trial of on-demand bus services on selected local bus routes to provide more convenience and choice for customers while improving the efficiency of the transport network

Initiatives for investigation (0-10; 10-20 and 20+ years):

- Introduction of higher frequency transport services across Greater Sydney:
 - Turn-up-and-go services (<5 minute frequencies) on city-city and centre-centre corridors
 - High frequency (<10 mins) or on-demand services on CBD mass transit and local corridors
- More convenient interchanges to encourage public transport use. This includes making interchanges more attractive and providing more services, such as retail outlets
- Implementation of improved road network management system to enable live monitoring of network performance across all modes that use our roads
- Implementation of Mobility as a Service (Maas) model in collaboration with industry, whereby private operators can sell integrated end-to-end journeys to customers that include multiple transport modes
- Trial of artificial intelligence applications to improve network management and/or customer service

Initiatives by decade – overview

Committed initiatives – 0-10 years

- **Eastern Harbour City:** capacity and journey time improvements to radial transport corridors serving the Harbour CBD and surrounding centres, with Sydney Metro Northwest, Sydney Metro City and Southwest, Northern Beaches B-Line, and CBD and South East Light Rail. New transport links to support growth and improve journey times, such as Western Harbour Tunnel and Beaches Link (subject to Final Business Case), and the proposed F6 - WestConnex to President Avenue, Kogarah (subject to Final Business Case)
- **Central River City:** new motorway links, including WestConnex and NorthConnex, and strategic public transport links, including Sydney Metro West (subject to Final Business Case) and Parramatta Light Rail, to improve journey times for people and goods and support better places in the Central River City
- **Western Parkland City:** investment in road-based transport to support the growth of Western Sydney Airport (WSA)-Badgerys Creek Aerotropolis and surrounding areas. Supporting the efficient movement of goods between the Western Parkland City and Port Botany by investing in access to Moorebank Intermodal Terminal (a Commonwealth initiative).

Initiatives for investigation - 0-10 years

- **Eastern Harbour City:** Upgrades to road and rail corridors to improve capacity and reliability including F6 - President Avenue, Kogarah to Loftus (for immediate detailed planning). Supporting freight by increasing road and rail capacity around Port Botany
- **Central River City:** investigation into strategic public transport links around Greater Parramatta to improve 30 minute access, including linking the T-Ways and upgrading transport corridors to improve capacity and reliability
- **Western Parkland City:** early investment in strategic links, such as the north-south train link through the Western Parkland City, the train linking WSA-Badgerys Creek Aerotropolis to Parramatta, and the train link from Leppington to the WSA-Badgerys Creek Aerotropolis. Infrastructure to support rapid bus links between centres, to shape a sustainable urban form and support access to WSA. Supporting freight with upgrades to the Southern Sydney Freight Line. Protection of future transport corridors to support the affordable delivery of passenger and freight infrastructure in the future.
- Improving safety for customers across Greater Sydney by investing in new roads that are designed to 4 or 5 star standard, deploying smart technology on additional motorways and investing in safety improvements at transport interchanges

Initiatives for investigation - 10-20 years

- **Eastern Harbour City:** investment in higher capacity public transport links in selected parts of the Eastern Harbour City to support urban renewal initiatives, including a mass transit/ train link to the South East and extension of light rail to Maroubra and the Bays Precinct. Supporting separation of freight and passenger trains by investing in freight capacity between Sydney and the Central Coast
- **Central River City:** development of higher capacity mass transit links around Parramatta to expand 30 minute access, particularly from the north to south, including potential links between Parramatta-Epping and Parramatta-Kogarah
- **Western Parkland City:** supporting population and jobs growth in the Western Parkland City through higher capacity public transport and road links. Supporting the efficient movement of freight to ports by investing in the Maldon-Dombarton freight rail link to the Illawarra and further increasing capacity on the Southern Sydney Freight Line

Visionary initiatives – 20+ years

- **Eastern Harbour City:** addressing longer-term capacity constraints on selected corridors through new train and road links, such as extension of the South East mass transit/ train link to Miranda
- **Central River City:** further investment in north-south transport links near Greater Parramatta to improve access and support better places, including through the Parramatta-Norwest mass transit/ train link. Supporting the efficient movement of freight with a Central City strategic road corridor
- **Western Parkland City:** higher capacity transport connections between centres to support population and jobs growth, including extension of Sydney Metro City and Southwest to Liverpool. Supporting the efficient movement of road freight from Moorebank Intermodal Terminal by extending the M5 to the Outer Sydney Orbital

Initiatives by decade – committed initiatives (0-10 years)

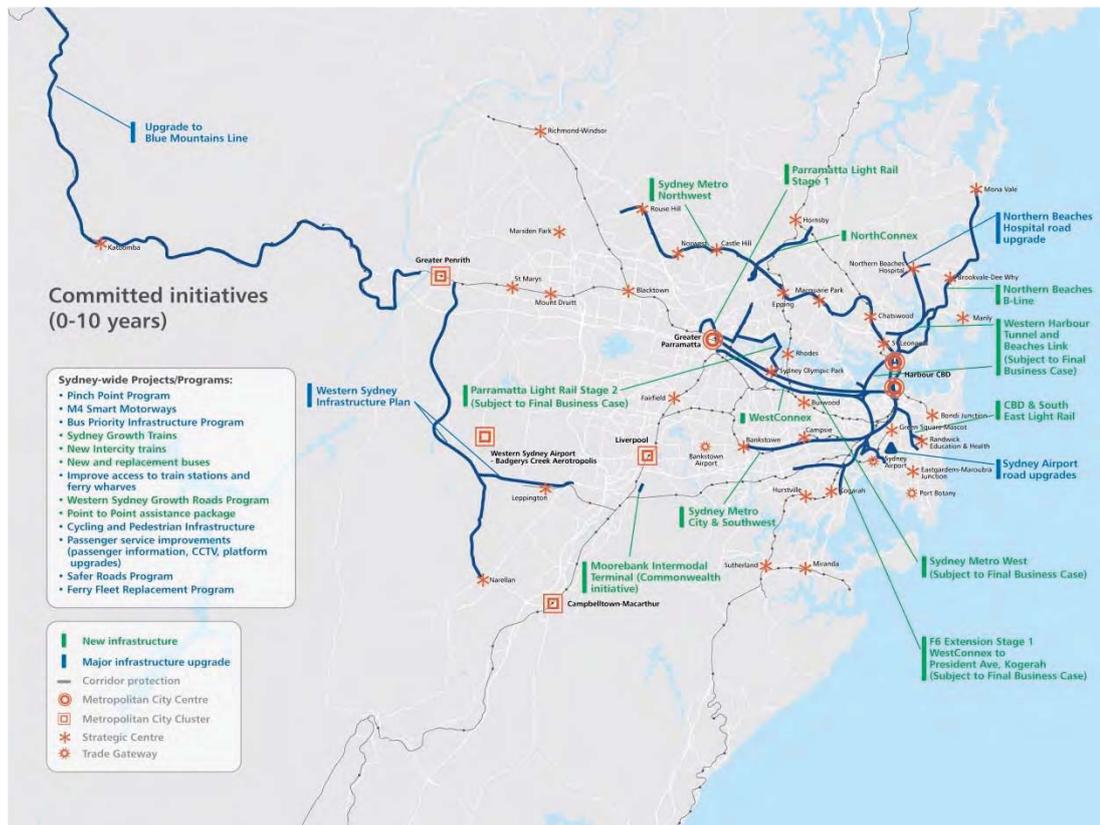


Figure 7 Committed initiatives (0-10 years)

New transport projects and capacity and journey time improvements to transport corridors:

- Sydney Metro Northwest
- Sydney Metro City & Southwest
- Northern Beaches B-Line
- CBD & South East Light Rail
- Northern Beaches Hospital road upgrade
- Sydney Airport road upgrades
- Upgrade Blue Mountains Line

New motorway links and strategic public transport links in the Eastern Harbour City and Central River City to improve journey times for people and goods and support better places:

- Parramatta Light Rail Stage 1 (Westmead to Carlingford) and Stage 2 (subject to Final Business Case)
- WestConnex
- NorthConnex
- Sydney Metro West (subject to Final Business Case)
- Western Harbour Tunnel and Beaches Link (subject to Final Business Case)
- F6 - WestConnex to President Avenue, Kogarah (subject to Final Business Case)

Investment in road-based transport to support the growth of the WSA-Badgerys Creek Aerotropolis and surrounding areas:

- Western Sydney Infrastructure Plan (in collaboration with the Commonwealth)
- Western Sydney Growth Roads Program

Improving safety for customers across Greater Sydney by investing in infrastructure treatments that improve intersection and pedestrian safety and deploying smart technology on selected motorways:

- M4 Smart Motorways – Invest in safety improvements, and incorporate smart technology to equip the M4 motorway for use by Connected and Automated Vehicles and to support improved performance and safety outcomes
- Safer Roads Program
- Walking and cycling infrastructure improvements

Initiatives by decade – initiatives for investigation (0-10 years - subject to business case development)

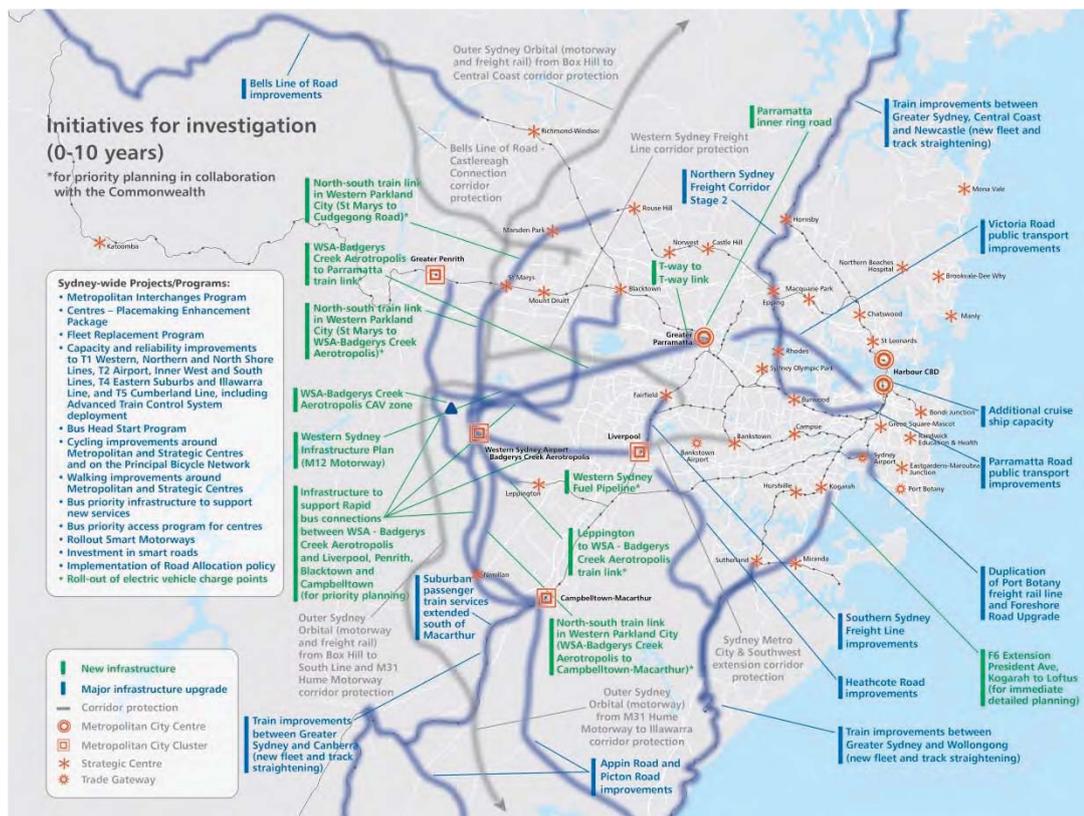


Figure 8 Initiatives for investigation (0-10 years)

New transport links to support growth and improve journey times. Upgrades to transport corridors, such as train links, to improve capacity and reliability. Supporting freight by increasing road and rail capacity around Port Botany, and supporting separation of freight and passenger trains by investing in freight capacity between Sydney and the Central Coast:

- Train improvements on T1, T2 and T4 train lines, including implementation of Advanced Train Control System (planning in-progress)
- Parramatta Road public transport improvements (planning in-progress)
- F6 - President Avenue, Kogarah to Loftus (for immediate detailed planning)
- Heathcote Road improvements – M5 to M1
- Duplication of Port Botany freight rail line (in collaboration with the Commonwealth)
- Northern Sydney Freight Corridor Stage 2

Investment in strategic public transport links around Greater Parramatta to improve 30 minute access. Upgrades to transport corridors such as road and mass transit/ train links, to improve capacity and reliability:

- Train improvements on T1, T2 and T5 train lines, including implementation of Advanced Train Control System (planning in-progress)
- Victoria Road public transport improvements (planning in-progress)
- Parramatta inner ring road

Early investment in strategic public transport links will shape a sustainable urban form and support access to Western Sydney Airport (WSA). Future forms of mobility will be investigated to be available to customers through a Connected and Autonomous Vehicles (CAVs) zone near the WSA-Badgerys Creek Aerotropolis, this will be developed to enable piloting of CAV technology.

Freight will be supported with the development of the Outer Sydney Orbital (to WSA) and upgrades to the Southern Sydney Freight Line. Transport corridors will be protected to reduce the cost of future delivery. Selected initiatives include:

- Train improvements on T1, T2 and T5 train lines, including implementation of Advanced Train Control System (planning in-progress)
- WSA-Badgerys Creek Aerotropolis–Parramatta train link (for priority planning in collaboration with the Commonwealth)
- North-south train link in Western Parkland City (for priority planning in collaboration with the Commonwealth):
 - St Marys to WSA-Badgerys Creek Aerotropolis
 - WSA-Badgerys Creek Aerotropolis to Campbelltown-Macarthur
 - St Marys-Cudgegong Road
- Leppington to WSA-Badgerys Creek Aerotropolis train link (for priority planning in collaboration with the Commonwealth)
- Infrastructure to support rapid bus connections between WSA-Badgerys Creek Aerotropolis and Penrith, Liverpool, Blacktown and Campbelltown-Macarthur (for priority planning)
- Western Sydney Infrastructure Plan (M12 motorway) (in collaboration with the Commonwealth)
- Appin and Picton Road improvements
- Bells Line of Road improvements
- Suburban passenger train services extended south of Macarthur to support urban growth
- Southern Sydney Freight Line improvements (in collaboration with the Commonwealth)

- Protection of corridors for future train and road links

Initiatives by decade – initiatives for investigation (10-20 years - subject to business case development)

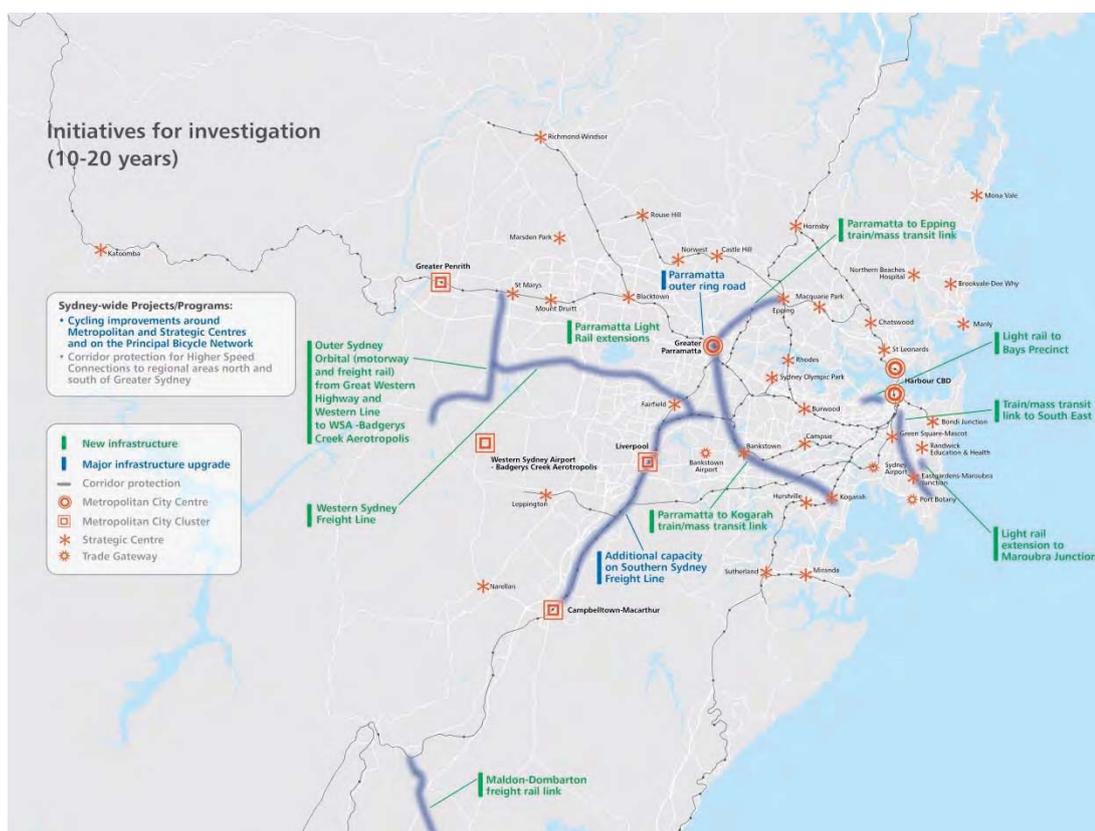


Figure 9 Initiatives for investigation (10-20 years)

Investment in higher capacity public transport links in selected parts of the Eastern Harbour City to support urban renewal initiatives.

- Mass transit/ train link to South East
- Light rail extension to Maroubra Junction
- Light rail to Bays Precinct

Development of high capacity mass transit links around Greater Parramatta to boost 30 minute access, particularly from the north and south:

- Parramatta to Epping train/ mass transit link
- Parramatta to Kogarah train/ mass transit link
- Parramatta Light Rail extensions
- Parramatta outer ring road

Supporting population and jobs growth in the Western Parkland City through higher capacity public transport and road links. Supporting the efficient movement of freight to ports by investing in the Maldon-Dombarton rail link to the Illawarra and providing additional capacity on the Southern Sydney Freight Line (in collaboration with the Commonwealth):

- Outer Sydney Orbital (motorway and freight rail) from Great Western Highway and Western Line to WSA-Badgerys Creek Aerotropolis
- Western Sydney Freight Line
- Additional capacity on Southern Sydney Freight Line (in collaboration with the Commonwealth)
- Maldon-Dombarton freight rail link

Initiatives by decade – visionary initiatives (20+ years - subject to business case development)

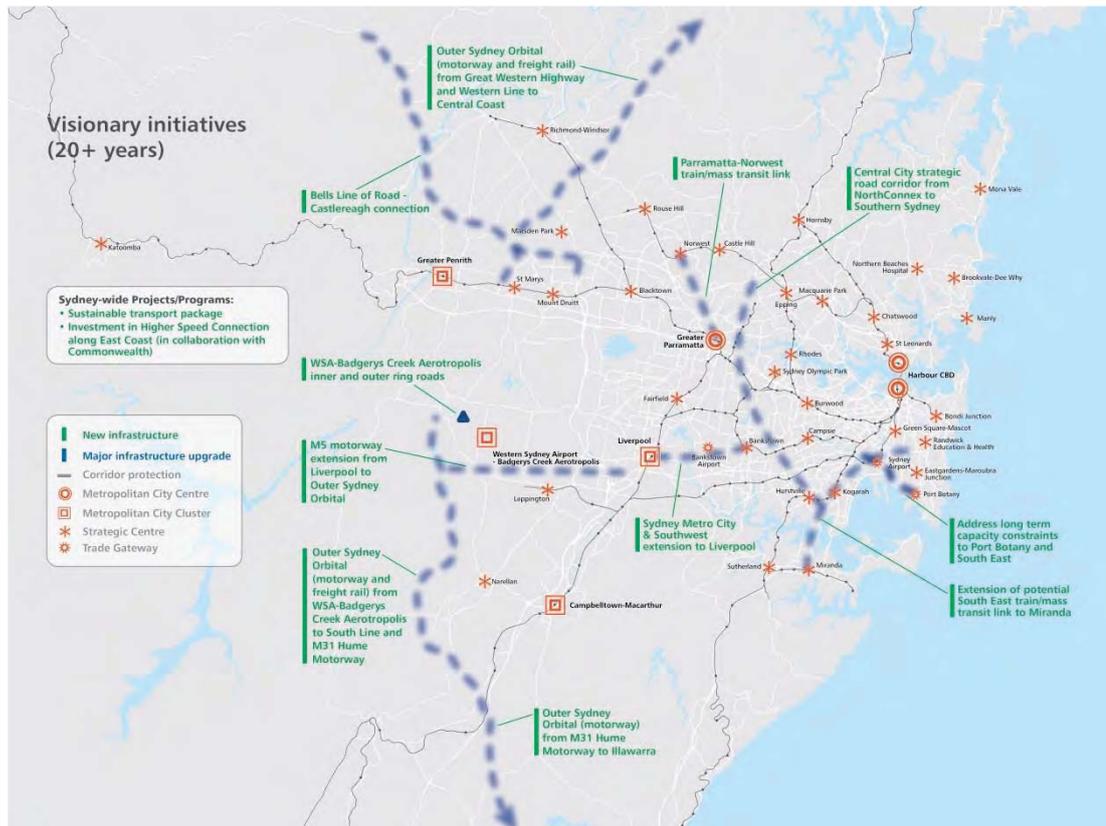


Figure 10 Initiatives for investigation (20+ years)

Addressing longer-term capacity constraints on selected corridors through new mass transit/ train and road links:

- Extension of potential South East mass transit/ train link to Miranda
- Address long term capacity constraints to Port Botany and South East

Further investment in north-south transport links near Greater Parramatta to improve access and support better places:

- Parramatta-Norwest mass transit/ train link
- Central City strategic road corridor

Higher capacity transport connections between centres to support population and jobs growth:

- Sydney Metro City & Southwest extension to Liverpool

- Outer Sydney Orbital (motorway and freight rail) from Great Western Highway and Western Line to Central Coast
- Outer Sydney Orbital (motorway and freight rail) from WSA-Badgerys Creek Aerotropolis to M31 Hume Motorway and South Line
- Outer Sydney Orbital (motorway) from M31 Hume Motorway to Illawarra
- Bells Line of Road-Castlereagh Connection
- WSA-Badgerys Creek Aerotropolis inner and outer ring roads
- M5 motorway extension from Liverpool to Outer Sydney Orbital

3. Land use and transport vision for 2056

An overview of the key challenges and opportunities for transport in Greater Sydney and the strategic land use and transport vision for 2056 that underpins our plans for services and infrastructure.

Opportunities and challenges for transport: supporting the growth of our city

Greater Sydney is undergoing significant change, which is creating opportunities and challenges for our transport system. These include the need to support the growth of the city, sustaining and enhancing our role as a global city and harnessing new technology for the benefit of customers.

Greater Sydney is one of the top 10 fastest growing cities in the developed world. By 2056, 8 million people will call the city home – 3 million more than now. This creates an opportunity for us to shape growth of the city but will also require changes to how people and goods move around the city.

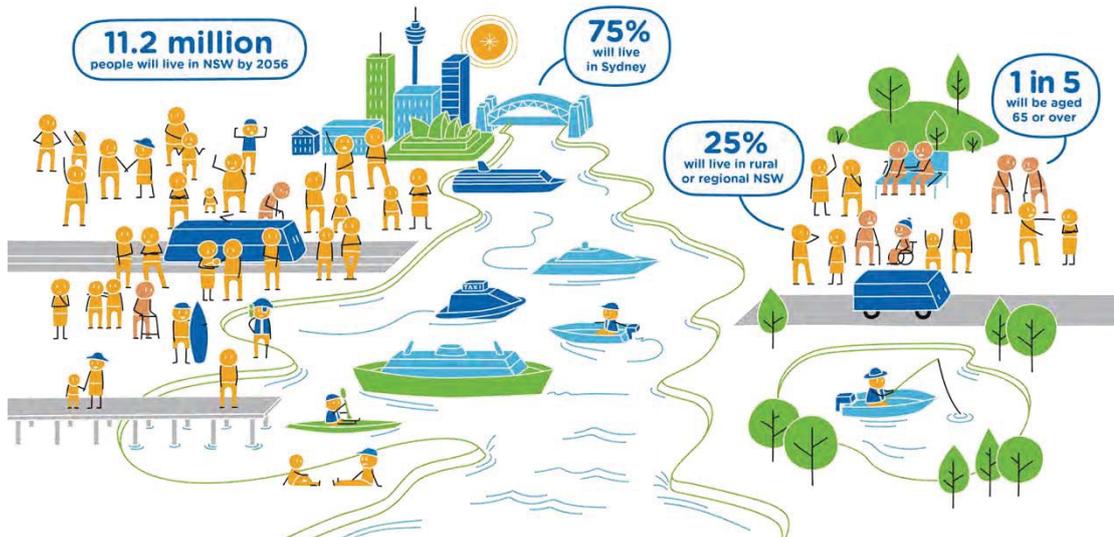


Figure 11 Population growth in Sydney in 2056

By 2056, Greater Sydney's population will be equivalent to the current population of some of the largest metropolitan areas around the world, such as London and New York City. The density of key centres will also increase. The Harbour CBD will have a population density similar to Singapore today, while Greater Parramatta will have a population density similar to what London has today.

The growth of Greater Sydney provides an opportunity to reconsider what the city will look like now and in the future. This includes the need to provide jobs and services close to where people live, sustain and enhance the liveability of our places

and support the sustainability of the city. Transport plays a critical role in achieving these aims by improving accessibility to jobs, services and other amenities.

A larger city with higher density centres will also change the transport task. It will mean an increase in the number of people and goods moving within Greater Sydney, greater diversity in travel patterns and more trips to and from areas where there is currently limited activity.

Enabling safe, efficient and reliable journeys for our customers will require significant changes to the size and structure of our transport network and the appeal of different travel options.

Population

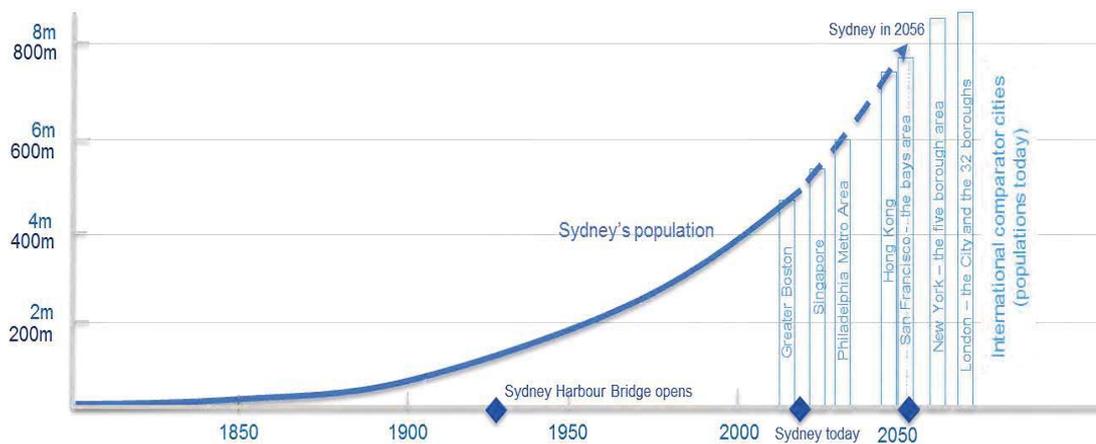


Figure 12 Comparison of population between Sydney and other cities

Population density

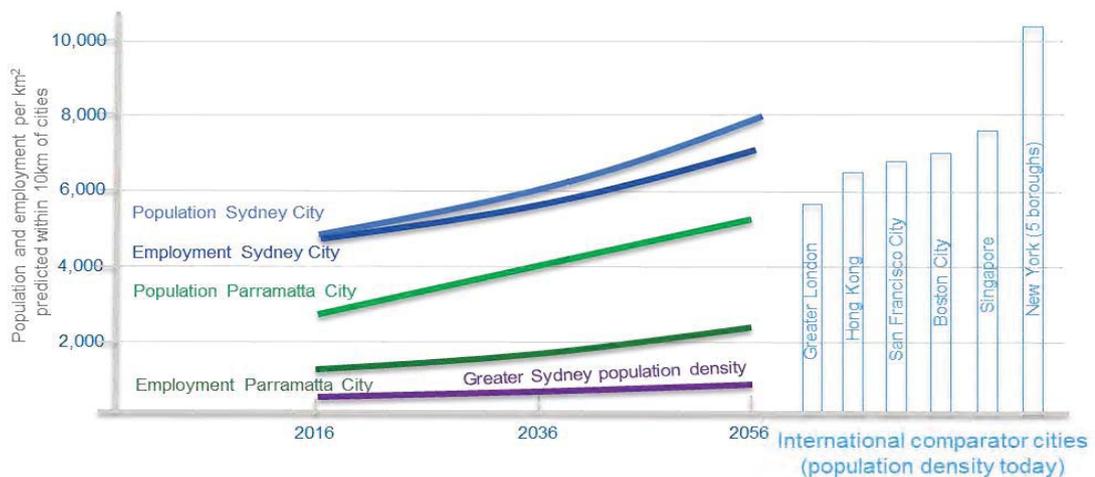


Figure 13 Comparison of population density between Sydney and other cities

The number of daily trips in Greater Sydney by all modes is forecast to increase from 11 million in 2016 to 15 million in 2036.

Opportunities and challenges for transport: sustaining and enhancing our role as a global city

Greater Sydney is Australia's leading global city. Its status as a world city is growing but we face more competition from established and emerging cities. Enhancing and sustaining Greater Sydney's status as a world city requires us to focus on those things that attract people and jobs – productivity, liveability and sustainability – and how transport can support these objectives. This includes encouraging greater use of more efficient forms of transport and planning our transport corridors so that we appropriately balance the need to safely and efficiently move people and goods with the need to support the liveability of places corridors pass through.

Greater Sydney's growing status as a world city is evident in the people that live in and visit the city and the links we have with the rest of the world. In 2017, Greater Sydney is more connected with the world than ever before, with 36.7 per cent of residents born overseas, 3.7 million overseas visitors travelling to the city (up from 2.7 million in 2013) and growing trade connections.

There is growing competition amongst cities to attract people and business as both continue to become more mobile. From Hong Kong to London and Dubai to New York, cities are competing to attract both jobs and people.

Maintaining our competitiveness and enhancing our status as a global city requires us to focus on those things that attract people and jobs – productivity, liveability and sustainability – and how transport can support these objectives. This includes increasing the competitiveness of more efficient and sustainable modes of transport. By global standards, a high proportion of trips in Greater Sydney are by private car (see Figure 14). This is a contributing factor to increasing congestion, which costs the city \$6.1 billion a year and is forecast to rise to \$12.6 billion by 2030 (BITRE 2015). Key global cities with a population of 5-8 million people are typically associated with a higher share of trips being by public transport, which improves productivity, liveability and sustainability outcomes.

Another important role of the transport system in sustaining and enhancing our role as a global city is to appropriately balance movement and place needs on the transport network. Transport corridors, including roads and train corridors, are where people and goods move. However, they also comprise places that are destinations themselves, including retail and dining precincts on some of our streets or civic centres next to railway/transfer stations. Enabling people and goods to move efficiently around the city while recognising the importance of the place through which roads pass is necessary for sustaining and enhancing the liveability of our city.

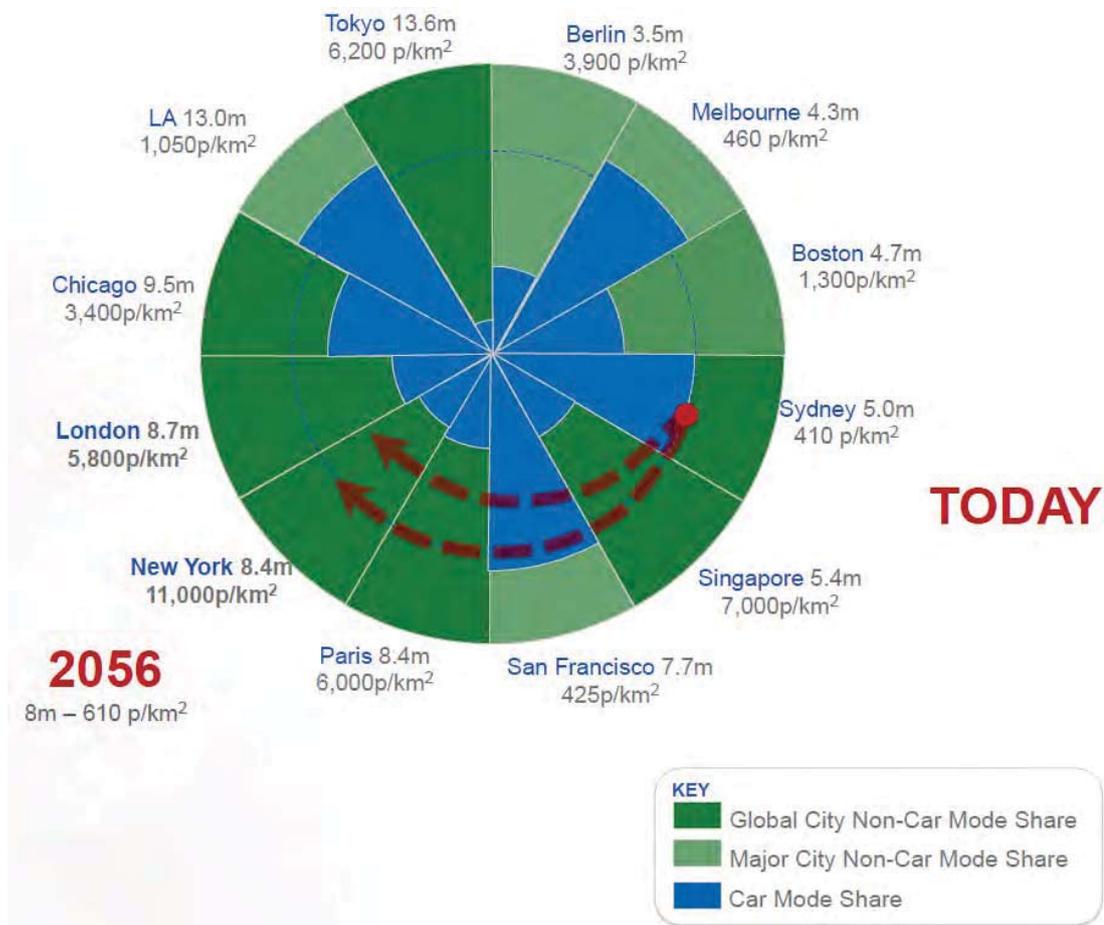


Figure 14 – Greater Sydney and its global city peers: a comparison of population and how people travel

Opportunities and challenges for transport: harnessing technology for the benefit of customers

“As well as building new infrastructure, we need to look at smarter systems and technology-driven solutions to cope with demand. We need to stay ahead of the game so it’s time we ask, what are the next big ideas? What are the next systems and technologies that are going to challenge us and shape the transport system in NSW?”

– The Hon. Andrew Constance MP, Minister for Transport and Infrastructure

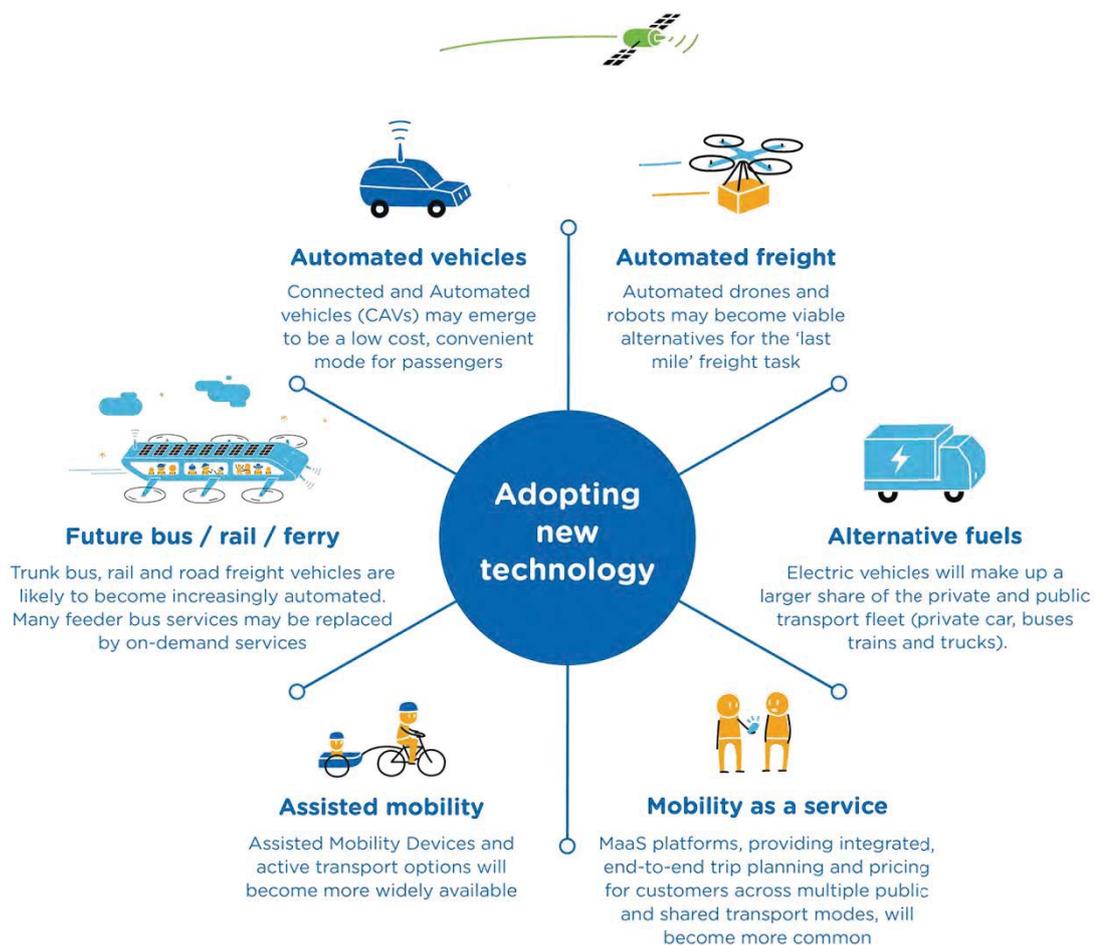


Figure 15 Different ways in which technology is influencing how we travel

The 2012 Long Term Transport Master Plan articulated our commitment to putting the customer at the centre of everything we do. This commitment remains at the heart of Future Transport. Technological change, however, is re-shaping how our customers use the transport network. This requires us to focus on how we can harness technology for the benefit of our customers.

Transport in Greater Sydney is undergoing significant change. New ridesharing service models have reshaped the market for point-to-point travel. Drivers no longer consult a printed street directory, they speak to the GPS in their cars. Rather than pushing paper tickets through a turnstile, people use Opal cards to tap on and off and the system automatically calculates the correct fare. A range of real-time mobility apps puts information in the hands of customers, giving them more choice and flexibility in how they move around and more control over how they spend their time. Ports and distribution centres are fully automated, and freight movements are tracked electronically at every step.

The potential range of applications for technology-enabled solutions is broad – from optimising available capacity and making more efficient use of it; to better network flows and resilience; to improvements in the safety, reliability and efficiency of networks, assets and services. By embracing technology and innovation, we can open up an exciting future of personalised transport for customers and fully unlock the value of investments in the network. For example, greater automation of mass transit services can improve the efficiency of the network while automated rideshare for first- and last-mile transport can deliver greater choice and convenience for customers.

New forms of mobility also require careful consideration about how we support their integration into the transport system in a way that aligns with the wider priorities for Greater Sydney. For example, Connected and Automated Vehicles (CAVs) have the potential to revolutionise road travel. However, considered planning – and potentially regulatory intervention – will be needed to ensure our roads continue to function efficiently and our centres remain places where walking and shared transport are prioritised.

Planning for the next 40 years gives us the opportunity to help shape how technology is used for the benefit of our customers. However, the uncertainties arising from the fast pace of technology-driven change – along with uncertainty about how customers will respond – mean that we need to be flexible in our planning. That is why the Services and Infrastructure Plan establishes a long-term vision that is flexible and adaptable as changes continue to impact the way people and goods move.

Vision for 2056: a metropolis of three cities

The Greater Sydney Commission (GSC) has established a vision for the region as a metropolis of three cities, where people can access the jobs, education and services they need within a travel time of 30 minutes. This underpins our strategic vision for transport in Greater Sydney, which is based around connecting our three cities and the centres and local areas within them.

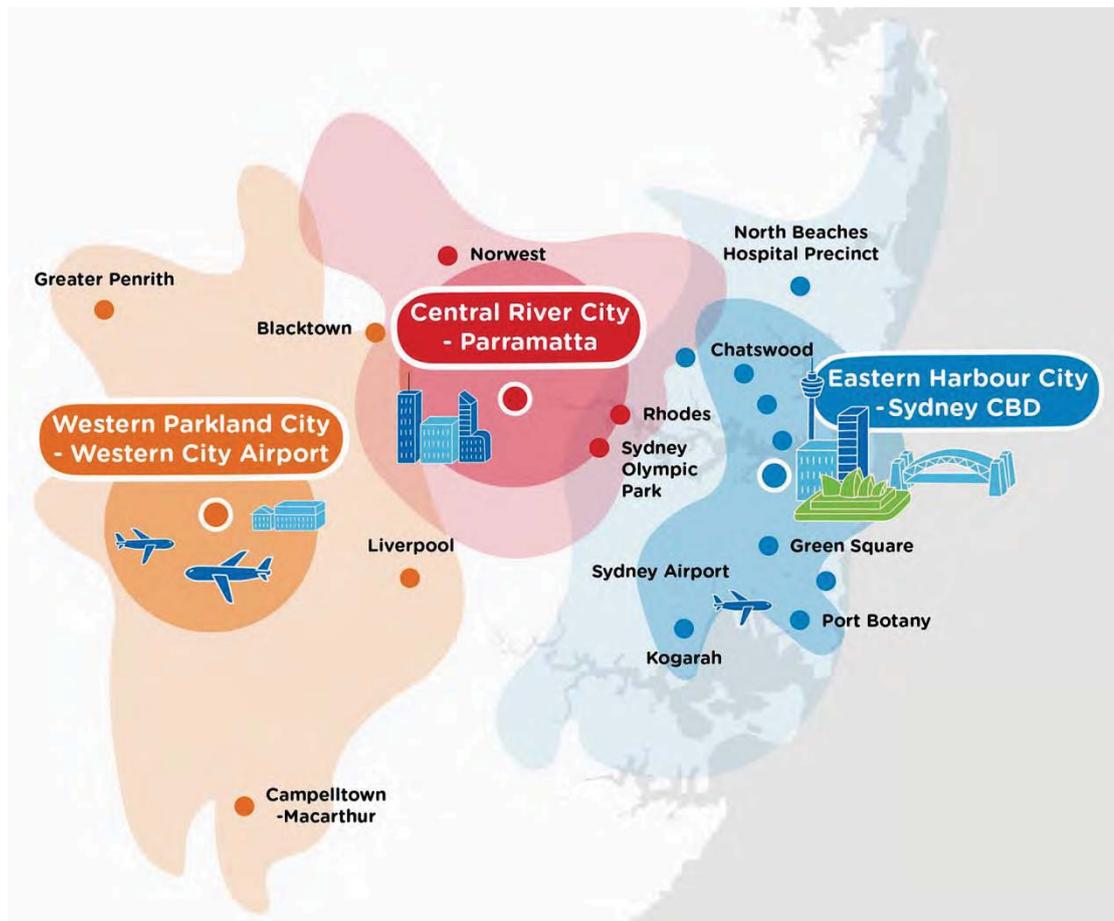


Figure 16 – Vision for Greater Sydney as a metropolis of three cities

In response to forecast growth and to help shape it, the Greater Sydney Commission has developed a strategic land use plan for the city. It sets out a vision for a shift away from thinking of Greater Sydney as a place anchored by an economically strong single central business district – a monocentric approach – to instead looking at a metropolis of three cities.

The land use vision for Greater Sydney is a city of three cities, providing convenient access to jobs and services for people across the city. The cities include the:

- **Eastern Harbour City** - the currently established Harbour CBD and economic corridors to its north through to Macquarie Park and south through Sydney Kingsford Smith Airport and Port Botany to Kogarah. It is an economic engine – especially in the financial, business and professional services and innovation

start-up sectors – with a beautiful harbour, sought-after suburbs and a large proportion of knowledge-intensive jobs. There are many opportunities to enhance the Eastern Harbour City, such as the renewal of government-owned land near the Harbour CBD and tackling congestion. Planning must support and enable the continued growth of the Eastern Harbour City's global industries and branding. The Eastern Harbour City includes the North, South and Eastern City Districts

- **Central River City** - Anchored by Greater Parramatta and the Olympic Peninsula (GPOP) and the Strategic Centres of Blacktown (also associated with Western Parkland City), Norwest, Macquarie Park (also associated with the Eastern Harbour City) and Rhodes. It is anticipated to experience the most significant urban transformation over the next 10 to 15 years. By 2036, it will be one of Greater Sydney's administrative and business centres, and the Westmead health and education precinct will continue to grow and lead best practice in medical and education-related industries. The geographic boundaries of the Central River City align with the Central City District
- **Western Parkland City** - Focused around the Metropolitan City Cluster of Western Sydney Airport-Badgerys Creek Aerotropolis, Greater Penrith, Liverpool and Campbelltown-Macarthur, the Western Parkland City is Greater Sydney's emerging city. It includes significant residential areas and employment lands, with employment particularly concentrated around the new aerotropolis. The geographic boundaries of the Western Parkland City align with the Western City District

This vision for Greater Sydney influences the places the transport system will need to serve, the location of transport corridors and the level of service required on these.

Vision for 2056: a 30 minute city



Figure 17 The principle of a 30 minute city

The vision for Greater Sydney is one where people can conveniently access jobs and services. This means people can reach their nearest Metropolitan and Strategic Centres within 30 minutes, 7 days a week. Crucial to this is improved public transport to ensure people can move efficiently around the city.

The 30 minute city is a guiding principle that provides people with access to education, jobs and services within 30 minutes by public transport regardless of where they live. It is based on established research that indicates that if people are required to travel more than 90 minutes a day, it impacts on quality of life and the liveability of a city.

The Greater Sydney Commission's Region Plan establishes the vision for Greater Sydney as a 30 minute city. As the city transitions to a metropolis of three cities, convenient and reliable access for customers by public and active transport to their nearest centre is increasingly important for:

- Productivity – reducing the time people spend travelling, increasing people's access to jobs and business' access to workers
- Liveability – improving the quality of life in Greater Sydney by reducing the need for long commutes and helping to manage congestion by better spreading transport demand
- Sustainability – increasing the proportion of trips by public and active transport and reducing average journey lengths, thereby reducing emissions and improving air quality

There are two components to the 30 minute city:

- Connecting people in each of the three cities with jobs and essential services in their nearest Metropolitan City Centre. These are the largest employment and service centres in each of the three cities – the Harbour CBD in the Eastern Harbour City, Greater Parramatta in the Central River City and WSA-Badgerys Creek Aerotropolis in the Western Parkland City.
- Connecting residents in each of the five districts to one of their Strategic Centres by public and active transport, giving people 30-minute access to local jobs, goods and services. Strategic centres are major centres for transport, health and education, such as Chatswood, Norwest and Liverpool. Each City contains multiple Strategic Centres (see Figure 18), boosting local economies and providing jobs and services close to where people live

The 30 minute city has important implications for transport. In planning transport services and infrastructure, we must consider how customers can conveniently reach their nearest Metropolitan or Strategic Centre within this timeframe.

Vision for 2056: Corridors for moving people and goods

Transport corridors support the movement of people and goods around the city. We have developed a plan for our transport corridors to align with the GSC's vision for Greater Sydney, connecting the three cities and local areas and centres within each of these.

A transport corridor is a broad, linear geographic area between major centres or trip generators. It does not refer to a specific route or mode of transport, whether it be a road or train line, although these should be aligned to corridors to respond to transport demand.

A hierarchy of corridors has been developed as part of the Greater Sydney Services and Infrastructure Plan. It is designed to align to the GSC's land use vision and to guide the service levels (e.g. transport mode, capacity and service frequencies) to be delivered. The hierarchy of corridors in Greater Sydney includes:

- **Trunk city-city** – Cross-city trunk services form the backbone of the Greater Sydney transport system. They connect the Eastern Harbour City, Central River City and Western Parkland City, and particularly the Metropolitan City Centre or Cluster within them – the Harbour CBD, Greater Parramatta and, in the Western City WSA-Badgerys Creek Aerotropolis, Greater Penrith, Liverpool and Campbelltown-Macarthur
- **Trunk centre-centre** – Centre-centre corridors also form the backbone of the transport system, connecting Metropolitan and Strategic Centres. Although they primarily connect centres within each of the three cities – consistent with the concept of the 30 minute city, which is that customers should be able to reach their nearest Metropolitan and Strategic Centres within 30 minutes – some also extend across different cities.
- **CBD mass transit** – Transport corridors connecting Metropolitan City Centres and areas within ~10km of them. These are distinct from centre-centre corridors as they are not necessarily linking Metropolitan City Centres with surrounding Strategic Centres, but rather the higher density suburbs around Metropolitan City Centres. While not always attracting the level of demand of trunk corridors, these types of corridors form a dense network of roads and transport services consistent with the surrounding urban form
- **Local corridors** – These comprise the suburban corridors that connect centres with surrounding residential areas outside of the ~10km radii of Metropolitan City Centres

Various trunk transport corridors also connect with regional corridors, linking the metropolis with areas such as the Central Coast, Illawarra, Southern Highlands and beyond.

The corridors are shown on Figure 18 and identified in Figure 19.

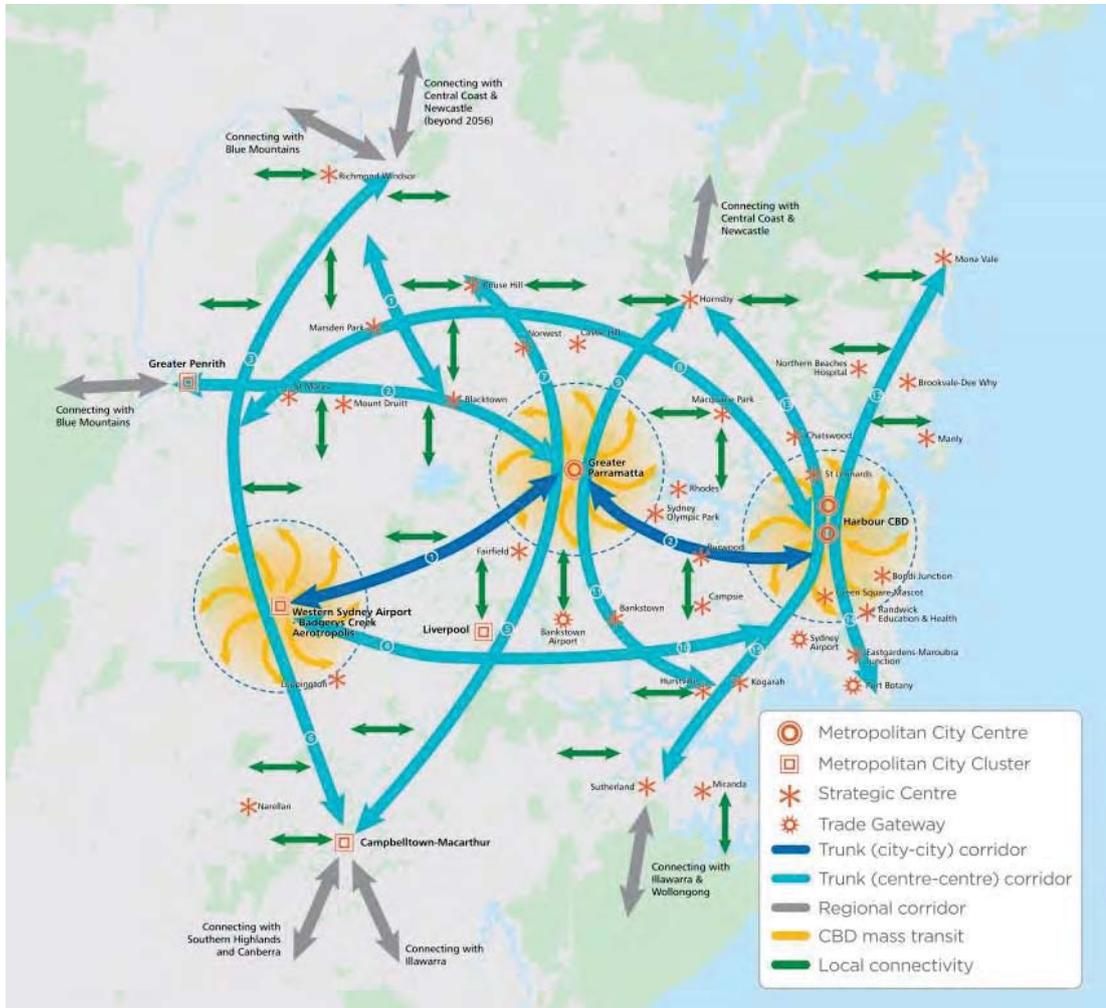


Figure 18 – Greater Sydney strategic transport corridors

Corridor type	Corridors		
	Within the Western Parkland City	Within the Central River City	Within the Eastern Harbour City
Trunk city-city	1. WSA-Badgenys Creek Aerotropolis – Greater Parramatta		2. Greater Parramatta – Harbour CBD
Trunk centre-centre	1. Mount Victoria – Richmond-Windsor – Blackdown	7. Rouse Hill – Norwest – Greater Parramatta	12. Mona Vale – Northern Beaches Hospital Precinct / Brookvale-Dee Why – Harbour CBD
	2. Mount Victoria – Greater Penrith – St Marys – Mount Druitt – Blackdown – Greater Parramatta		13. Brooklyn – Hornsby – Chatswood – St Leonards – Harbour CBD
	3. WSA-Badgenys Creek Aerotropolis – St Marys / Greater Penrith – Marsden Park – Richmond-Windsor / Rouse Hill	8. Rouse Hill – Norwest – Castle Hill – Epping – Macquarie Park – Chatswood / Harbour CBD	9. Greater Parramatta – Epping – Hornsby
	4. WSA-Badgenys Creek Aerotropolis – Leppington – Liverpool – Bankstown		10. Bankstown – Campsie – Sydney Kingsford Smith Airport
	5. Picton – Campbelltown-MacArthur – Narellan – Fairfield – Greater Parramatta		14. Harbour CBD – Green Square-Mascot / Randwick Education & Health Precinct – Eastgardens-Maroubra Junction – Sydney Kingsford Smith Airport / Port Botany
	6. Campbelltown-MacArthur – Narellan – Camden WSA-Badgenys Creek Aerotropolis		11. Greater Parramatta – Bankstown – Kogarah / Hurstville
CBD mass transit	Transit corridors connecting WSA-Badgenys Creek Aerotropolis with areas within ~10km	Transit corridors connecting Greater Parramatta with areas within ~10km	Transit corridors connecting the Harbour CBD with areas within ~10km
Local connectivity	Local corridors connecting to centres and trunk corridors across Western Parkland City	Local corridors connecting to centres and trunk corridors across Central River City	Local corridors connecting to centres and trunk corridors across Eastern Harbour City

Figure 19 Greater Sydney strategic transport corridors across each of the three cities

4. Customer outcomes for Greater Sydney

An overview of the outcomes that customers can expect when using transport in Greater Sydney

1. New technology is harnessed to provide an integrated, end-to-end journey experience for customers
2. Future forms of mobility are made available to customers and integrated with other modes of transport
3. Walking or cycling is the most convenient option for short trips around centres and local areas, supported by a safe road environment and suitable pathways
4. Vibrant centres supported by streets that balance the need for convenient access while enhancing the attractiveness of our places
5. 30 minute access for customers to their nearest centre by public transport seven days a week
6. Fast and convenient interchanging, with walking times of no longer than five minutes between services
7. Efficient, reliable and easy-to-understand journeys for customers, enabled by a simple hierarchy of services
8. Efficient and reliable freight journeys supported by 24/7 rail access between key freight precincts with convenient access to centres
9. A safe transport system for every customer with the aim for zero deaths or serious injuries on the network by 2056
10. Fully accessible transport for all customers
11. Transport services and infrastructure are delivered, operated and maintained in a way that is affordable for customers and the community
12. A resilient transport system that contributes to the NSW Government's objective of net-zero emissions by 2050

Customer Outcome 1: New technology is harnessed to provide an integrated, end-to-end journey experience for customers.

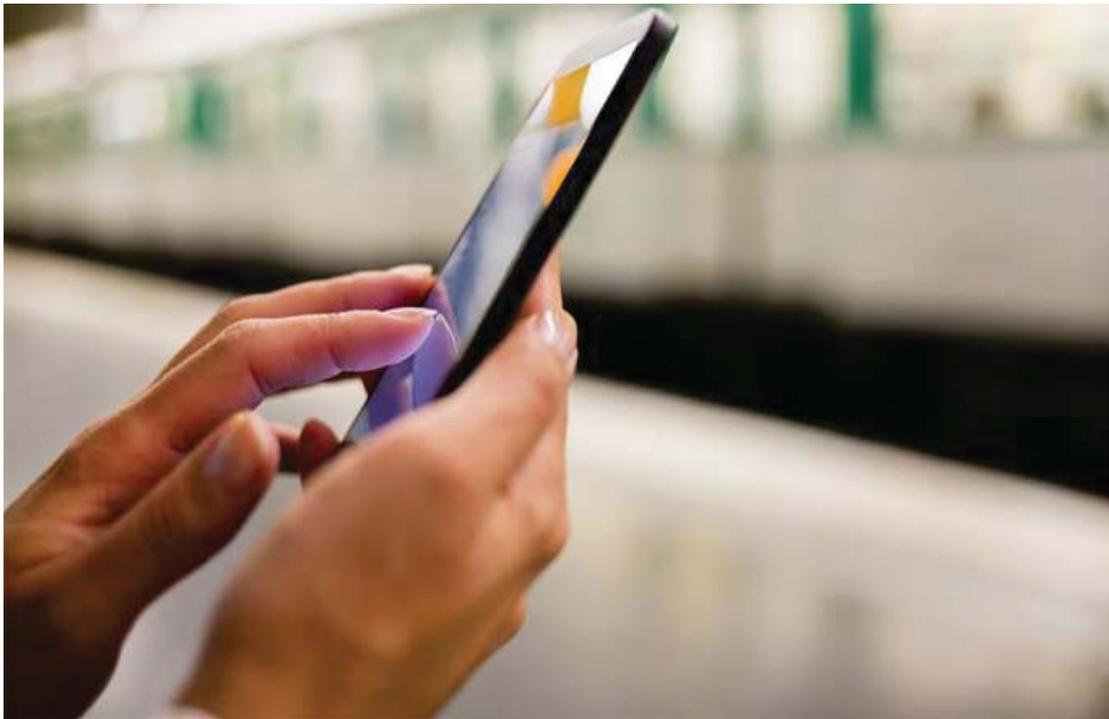


Figure 20 Smartphones connecting customers to transport information

Transport that is simple to use and easy to understand is one of the characteristics that customers most value. This requires an integrated focus on the end-to-end customer journey, not just the individual elements. The emergence of Mobility as a Service (MaaS), where customers can use a single account and ticketing interface to access a broad range of transport modes, presents an opportunity to improve integration.

We will provide customers with an integrated experience across the transport network by working with industry to harness the potential of MaaS. MaaS is a business model that harnesses technology to enable customers to use a single account and booking interface to plan and purchase a full end-to-end journey across different transport modes – whether public or private transport. For example, a customer would be to use their phone to plan a journey from their home to destination and make a single purchase covering all modes of travel, such as car share, point-to-point travel, bike share and public transport.

We will harness the potential of MaaS to provide a more integrated, convenient journey experience for customers by working with industry to enable MaaS service providers to operate in Greater Sydney. This will include ensuring transport data is made available to MaaS operators and that technology platforms are in place.

Customer Outcome 2: Future forms of mobility are available to customers and integrated with others modes of transport.



Figure 21 Connected and automated vehicles will change our transport experience

The Future Transport Technology Roadmap and Future Transport Strategy identify a range of new forms of mobility that may emerge over the next 40 years. These include Connected and Autonomous Vehicles, personal mobility devices and alternatively fuelled vehicles. Harnessing the potential of these technologies so that they are available to customers and support the wider objectives for the city as a productive, liveable and sustainable metropolis requires them to be effectively integrated into the transport system. Simply, this means ensuring that all forms of mobility work together as part of a single transport system that delivers the customer outcomes. We will achieve this by ensuring regulatory settings, transport services and infrastructure are in place to:

- Prioritise different forms of mobility based on the function they perform. For example, in our busiest centres, public transport and walking will be prioritised over CAVs to ensure that customers have efficient and reliable journeys
- Ensure new forms of mobility operate effectively. For example, changes to road regulation and infrastructure may be required to support the introduction of CAVs
- Enable new service providers to access infrastructure, where appropriate. For example, shared CAV providers may require access to public drop-off areas.

Customer Outcome 3: Ensure walking or cycling is the most convenient option for short trips around centres and local areas, supported by a safe road environment and suitable pathways.

Walking and cycling are fundamental to how we move around our city. Every weekday in Greater Sydney, customers make around 8 million journeys that are shorter than two kilometres and 15 million trips less than 10 kilometres. Our aim is to make walking or cycling the transport choice for quick trips under two kilometres and grow the share of cycling for trips up to 10 kilometres to support access to centres and public transport as well as healthy transport choices for trips within local areas.

This means working with stakeholders to:

- Provide attractive spaces for people to walk or cycle and to sit and take a break
- Enable efficient and reliable journey times by prioritising pedestrian or cycling movement on certain corridors, consistent with the Movement and Place Framework, providing strategic links such as Wynyard Walk and working with local government to ensure the design and function of local areas supports walking and cycling
- Keep pedestrians and cyclists safe by implementing critical safety measures and ensuring speed limits are aligned to the road environment (e.g. Lower in centres where there is high pedestrian activity) consistent with the Movement and Place Framework
- Invest in the Principal Bicycle Network and improve cycling access within ten kilometres of Metropolitan City Centres or Clusters and five kilometres of Strategic Centres.

Customer Outcome 4: Vibrant centres supported by streets that balance the need for convenient access with enhancing the attractiveness of our places.

Our centres are critical economic and community assets. They are places where the majority of jobs and services are located and also where key attractions are, including shops, restaurants and parks. Balancing the needs of our customers to move easily around centres while ensuring they are attractive places for activities is therefore an important outcome. This is particularly relevant to how our roads are planned and operated. Within centres, customers rely on roads for travelling by car or public transport, parking, walking, cycling and relaxing – whether that be shopping, dining or sitting.

We will balance these needs by working with stakeholders, including local councils, to apply the Movement and Place Framework within centres. This means that in some streets, pedestrian activity will be prioritised while other streets will be important corridors for public transport and cars. Parking will also be provided in a way that is consistent with the level of access by alternative modes of transport. As centres become busier and are more accessible by public transport, parking space may be used for other purposes, such as for public transport or loading zones.

Customer Outcome 5: 30 minute access for customers to their nearest centre by public transport, seven days a week

The '30 minute city' is an important concept for guiding the improvement and maintenance of access to centres and other key locations. It is about providing customers with convenient access to education, jobs and services in their nearest centres.

The Greater Sydney Commission's Regional Plan establishes the vision for Greater Sydney as a '30 minute city'. As the region transitions to a metropolis of three cities, convenient and reliable access for customers by public transport to their nearest centre will become increasingly important for the productivity, sustainability and liveability of the city. A coordinated approach to land use, transport and infrastructure is essential to delivering this outcome.

As part of this integrated approach, we will deliver services and infrastructure that enable 30 minute access by public transport:

- For people in each of the three cities to jobs and significant services in their nearest Metropolitan City Centre or Cluster – the Harbour CBD, Greater Parramatta or, in the Western City, WSA-Badgerys Creek Aerotropolis, Greater Penrith, Liverpool and Campbelltown-Macarthur. This will help drive the productivity of our city by effectively connecting people and jobs
- For residents in each of the five districts to their nearest Strategic Centre. This is important for the liveability of Greater Sydney, enabling people to conveniently access local jobs, goods and services

We will achieve this through investment in mass transit, improving service frequencies, better prioritising public transport around centres (see Figure 22) and improving walking and cycling connections to public transport.

Service type	Peak frequency	Off-peak frequency	Service type	All day frequency
Metro	3-5 mins	5-7 mins	City-city	Turn-up-and-go (<5 mins)
Train	3-30 mins	5-30 mins	Centre-centre	Turn-up-and-go (<5 mins)
Rapid bus	10 mins	10 mins	CBD mass transit	High frequency (<10 mins) or on-demand
Suburban bus	10 mins	15 mins	Local	High frequency (<10 mins) or on-demand
Local bus	15-30 mins	30-60 mins		
Light rail	8 mins	15 mins		
Ferry	10-30 mins	30-60 mins		

Figure 22 – Improving service frequencies to support the 30 minute city

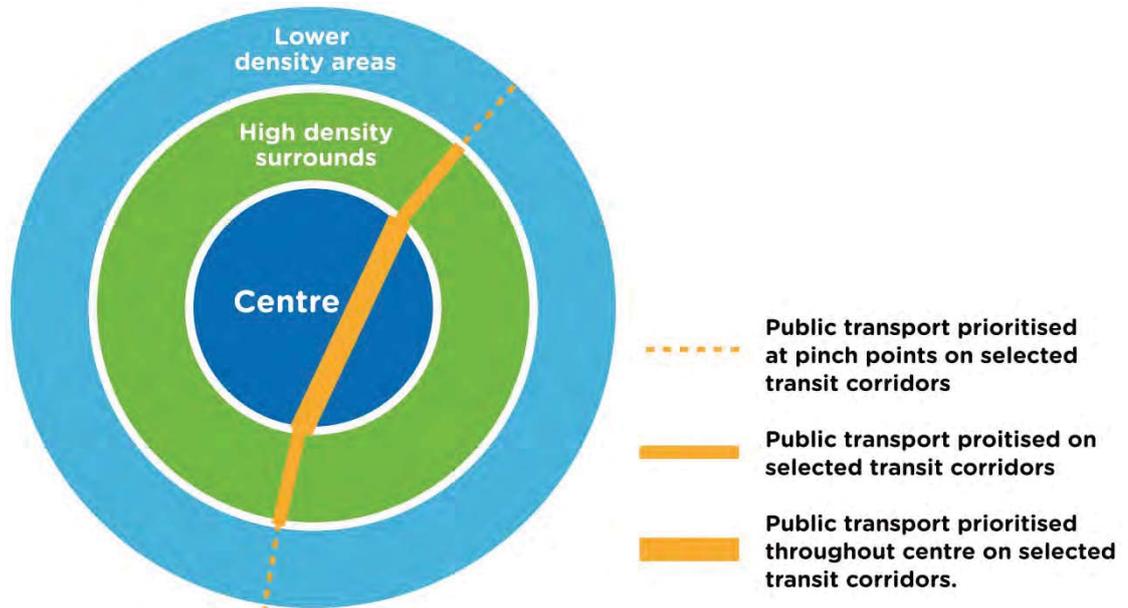


Figure 23 – Improved prioritisation of on-road public transport around centres

Customer Outcome 6: Fast and convenient interchanging, with walking times of no longer than five minutes between services.



Figure 24 Convenient and comfortable interchange

Interchanges are places where customers access the public transport network and where transport services come together. Interchanges provide opportunities for customers to reach more destinations by transferring between different services and also form focal points around which many of our centres grow. In doing so, they support access to jobs and services for customers.

To enable customers to transfer easily and safely between different services, we need to improve the convenience of interchanging. This means that from the time customers alight a service, it should take no longer than five minutes to reach the point where their next service departs from.

- A range of measures will be investigated to deliver this customer outcome, including:
 - Providing open spaces to provide more direct paths between services
 - Options for barrier-less ticketing to reduce congestion, particularly in peak periods
 - Enabling digital technology to disseminate personalised information to customers at interchanges
 - Improving walking and cycling access around interchanges.

Customer Outcome 7: Efficient, reliable and easy-to-understand journeys for customers, enabled by a simple hierarchy of services

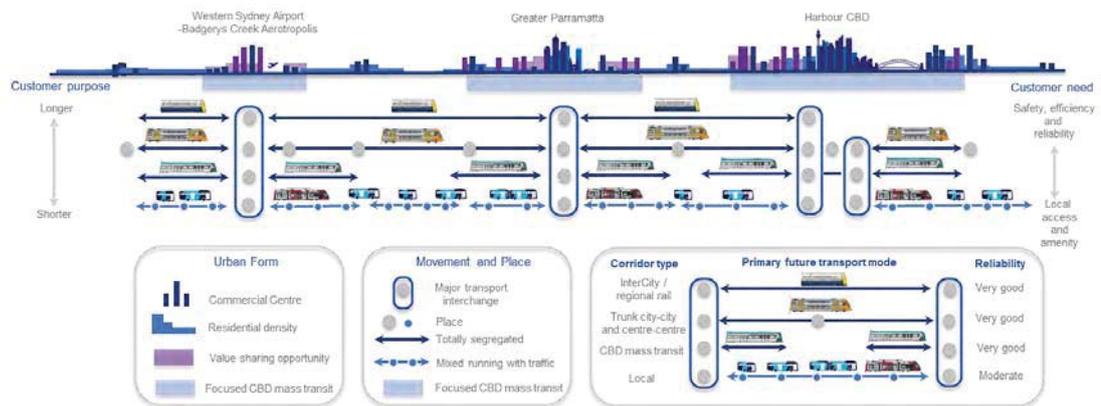


Figure 25 – Public transport services and the places they will connect

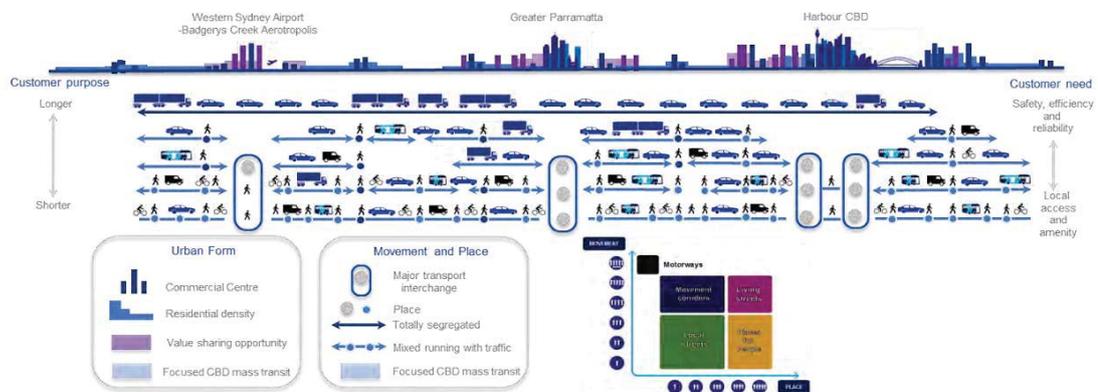


Figure 26 – Road hierarchy and the places it will connect

Transport for NSW will provide efficient, reliable and easy-to-understand journeys for customers across all modes of transport, enabled by a simple hierarchy of transport services and roads. Our public transport system will comprise four types of services, providing customers with efficient, reliable and easy-to-understand journeys:

- **Regional services** (connecting regional areas with Greater Sydney)
- **Cross-city trunk services** (connecting the Eastern, Central and Western Cities as well as the centres within them)
- **CBD mass transit** (connecting Metropolitan City Centres with local areas within ~10km)

- **Local services** (connecting centres and interchanges with surrounding local areas outside the ~10km area of Metropolitan City Centres)

For all types of transport – public and private – roads will continue to perform an important function in transporting people and goods within Greater Sydney. Efficient, reliable and easy-to-understand journeys will be enabled through a clear road hierarchy that better separates different types of trips. The road hierarchy will be based on our Movement and Place Framework, which acknowledges that our road network performs a dual function – it moves people and goods and provides destinations (or places) in their own right where activities occur supported by adjacent land use. Planning, designing and operating our road network in a way that acknowledges these different functions will help to provide better journeys for all road users – whether it be private vehicle users, public transport customers or pedestrians and cyclists.

Customer Outcome 8: Efficient and reliable freight journeys supported by 24/7 rail access between key freight precincts and with convenient access to centres

On our busiest freight corridors – between intermodal terminals and ports – freight customers will have 24/7 access to rail links. This will support more efficient and reliable movement of container freight and help to achieve NSW Ports’ target of 40% of container movements to and from Port Botany being by rail in 2045.

We will also improve last mile freight access to all centres through a range of measures that support the place function of centres while enabling goods to be safely, reliably and efficiently delivered to customers.



Figure 27 – Greater Sydney strategic freight vision

Customer Outcome 9: A safe transport system for every customer with zero deaths or serious injuries on the network by 2056

The safety of customers is the most fundamental requirement of the transport system, where every customer reaches their destination safely.

By 2056, NSW will have a network with zero trauma, saving some 350 lives and more than 12,000 serious injuries each year and cutting the cost of trauma to the community by over \$7 billion a year. We will work towards achieving this service outcome through a Safe System approach, where we plan services and design infrastructure to integrate with human behaviour to prevent trauma. It involves all elements of the system (infrastructure, vehicles, speeds and user behaviour) working together to ensure safety and in a way that accounts for human error.

To ensure safe mobility for all customer and freight travel, safety outcomes will be built into our infrastructure and services upfront. Principles to guide this include:

- Lifting design standards so all new roads are 4 or 5 star
- Prioritising separation of different transport users to improve safety, freight efficiency and promotion of active travel
- Ensuring safety features are better matched to road function and account for the different road users in each environment
- Encouraging uptake of 5-star vehicles and faster adoption of critical safety technologies, such as auto emergency braking and lane assistance
- Encouraging modal shift away from private vehicle usage and toward public transport modes

Customer Outcome 10: Fully accessible transport for all customers



Figure 28 Accessible platform at a Sydney Metro station

Transport is a vital service. It connects people and communities, and provides access to jobs, social activities, family, and essential services. That's why we're committed to making transport accessible for everyone including people with disability, who use a wheelchair or mobility device, who are elderly, who are travelling with a pram or luggage, and those with socioeconomic disadvantage.

An accessible transport system begins with us continuing to put the customer at the centre. We will continue to engage with customers with a disability, elderly customers and those that travel with a pram or luggage to understand their needs and ensure we plan our services and infrastructure to be accessible to them. This includes:

- Planning services to ensure customers have equitable and safe access to transport, including where on-demand services may be implemented
- Investing in transport vehicles/fleet as well as stations, stops and wharves across Greater Sydney to ensure all customers can access these.

Customer Outcome 11: Transport services and infrastructure are delivered, operated and maintained in a way that is affordable for customers and the community.

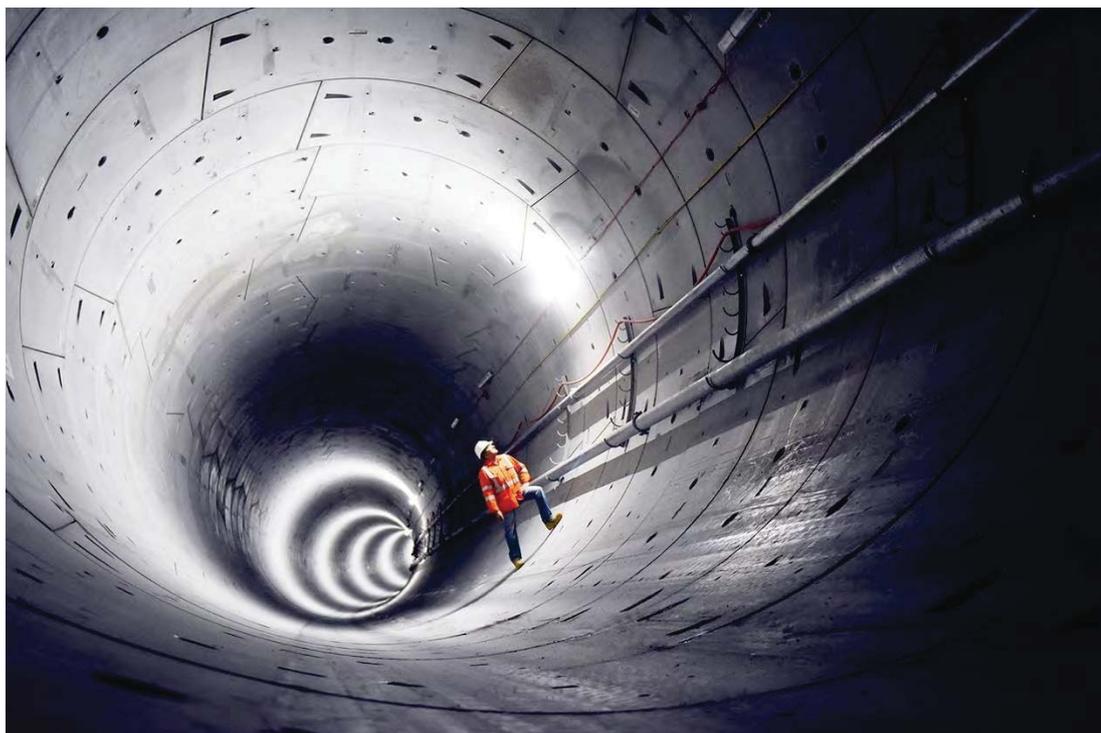


Figure 29 Infrastructure that is sustainable to operate and maintain

The financial sustainability of the transport system is essential for customers and the community alike. It enables a high-quality customer experience, ensures fares are affordable and enables us to keep investing in the transport system.

We will ensure the transport system is financially sustainable through informed decision-making and services and infrastructure being delivered, operated and maintained in a way that is affordable over the long-term. This includes sound whole-of-life management of roads, railways, wharves and transport vehicles.

Where appropriate, we will partner with industry to achieve this outcome – whether this be enabling new services and infrastructure to be developed by industry or continuing to engage the private sector to deliver, operate and maintain services and infrastructure. This will be undertaken in a way that ensures the transport system is safe, reliable and available to provide the desired operational performance, be sustainable and be presentable for customers.

Customer Outcome 12: A resilient transport system in Greater Sydney that contributes to the NSW Government's objective of net-zero emissions by 2050.

Climate change and resilience are critical challenges facing the Greater Sydney transport system. We will transition towards a system that contributes towards the NSW Government's objective of net zero emissions by 2050 by improving the attractiveness of more sustainable modes of transport and harnessing new technologies to improve the efficiency of the transport system. This network will also be resilient against climate uncertainties. Various measures will be adopted to support this outcome, including:

- Planning services and infrastructure for a '30 minute city' to help reduce emissions associated with transport
- Planning services and infrastructure to improve the attractiveness of more sustainable modes of transport, including public transport, walking and cycling
- Use of more efficient, sustainable energy sources
- Designing infrastructure that is sustainable and resilient, using resilient design principles and new technologies.

5. Future networks

Our future train, intermediate transit, walking and cycling, road and strategic freight networks are based on infrastructure initiatives that are committed or identified for investigation. These initiatives are categorised by decade in which they may be required and are subject to further investigation.

Train/ mass transit network – overview of potential future rail corridors

Trains form the backbone of Greater Sydney's public transport system, enabling large numbers of customers to access centres reliably and efficiently. The future vision for our train system is to build on this role, supporting 30 minute access for customers to their nearest Metropolitan City Centre and providing high capacity transport between these centres. This demands a more extensive network that delivers better access to Greater Parramatta and the WSA-Badgerys Creek Aerotropolis, while continuing to support growth in the east.

As our city transitions to a metropolis of 8 million people, more customers will need access to jobs and services, meaning more people accessing the Harbour CBD, Greater Parramatta and – in the future – the WSA-Badgerys Creek Aerotropolis. This requires customers across Greater Sydney to have convenient access to efficient, reliable and high capacity transport to each of these centres.

Trains or mass transit will facilitate this by connecting suburbs on our busiest corridors with the nearest Metropolitan City Centre and selected Strategic Centres. The intermediate transit network will support this with frequent services between suburban train stations and surrounding local areas. The mass transit/ train network will also support efficient and reliable access between Metropolitan City Centres for customers travelling across Greater Sydney.

The future train/ mass transit network will support this vision through more links to Greater Parramatta and WSA-Badgerys Creek Aerotropolis. This will enable more customers in the Central River City and the Western Parkland City to access jobs and services within 30 minutes. To support population and jobs growth, mass transit/ train lines on selected corridors in the Eastern Harbour City, including the South East, will also be investigated.

In addition to improving access to jobs and services across Greater Sydney, the future network will also provide more choice for customers on destinations they can access by opening up interchange opportunities. It will also help reduce dependence on some of the busiest transport corridors in Greater Sydney – around the Harbour CBD – by reducing the need for customers to travel through this part of the region to access other centres.

Train/ mass transit network – staging of initiatives and benefits for customers

Current network and committed initiatives

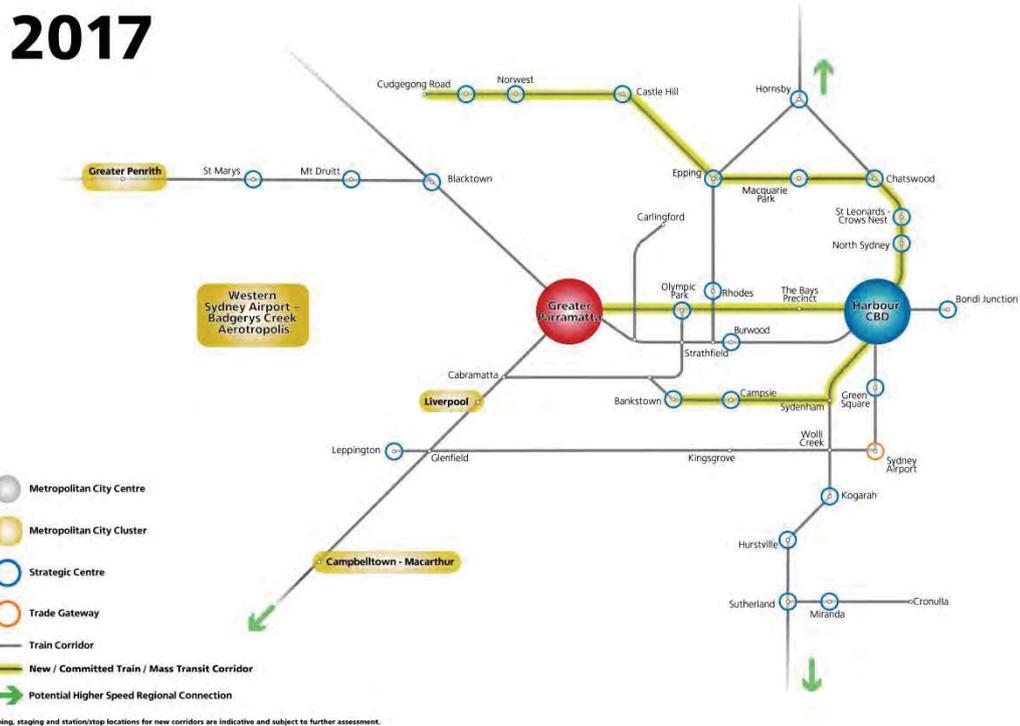


Figure 30 Greater Sydney mass transit/ train network - Committed (0-10 years)

Committed initiatives:

- Sydney Metro Northwest
- Sydney Metro City and Southwest
- Sydney Metro West (subject to Final Business Case).
- Upgrade to Blue Mountains Line

Benefits for customers:

The first Sydney Metro lines will deliver a step-change in service levels for customers in the north-west, east and south-west of Greater Sydney. Customers in the north-west will have faster, more reliable access to the Harbour CBD and Strategic Centres from Norwest to Epping and to Chatswood. Sydney Metro City and Southwest will extend direct metro services to the Harbour CBD and Bankstown, relieving pressure on some of the city's busiest train lines and providing more frequent services for customers.

A new metro line between Greater Parramatta and the Harbour CBD will deliver turn-up-and-go services on one of Sydney's busiest transport corridors. This will reduce

journey times between the Central River City and Eastern Harbour City, support growth on the corridor, particularly in the Bays Precinct as well as Greater Parramatta and the Olympic Peninsula, and help to manage crowding on the T1 Western Line.

Upgrades to transport corridors such as the Blue Mountains Line will improve capacity and reliability.

Mass transit/ train network in 10yrs with initiatives for investigation

2026

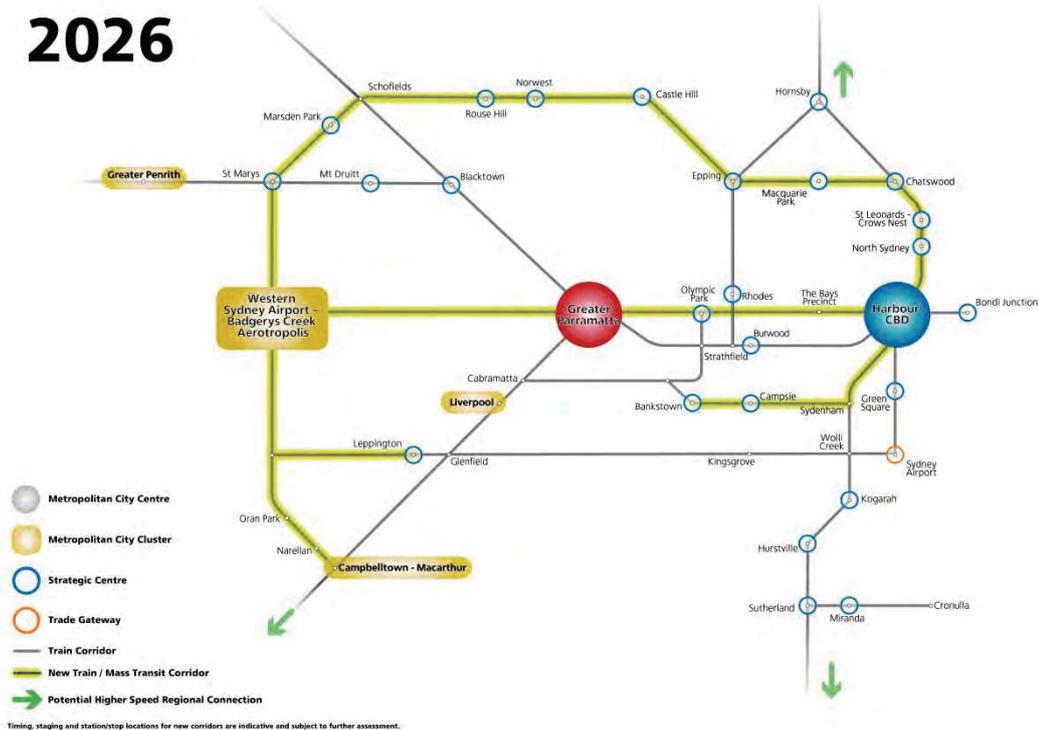


Figure 31 Greater Sydney mass transit/ train network – for investigation (0-10 years)

Initiatives for investigation (0-10 years):

- WSA-Badgerys Creek Aerotropolis-Parramatta train link (for priority planning in collaboration with the Commonwealth)
- North-south train link in Western Parkland City (for priority planning in collaboration with the Commonwealth):
 - St Marys to WSA-Badgerys Creek Aerotropolis
 - WSA-Badgerys Creek Aerotropolis to Campbelltown-Macarthur
 - St Marys-Cudgegong Road
- Leppington to WSA-Badgerys Creek Aerotropolis train link (for priority planning in collaboration with the Commonwealth)
- Train improvements on T1, T2, T4 and T5 lines
- Passenger train improvements south of Macarthur
- Corridor protections in the Western Parkland City.

Benefits for customers:

The north-south train link through the Western Parkland City will enable more customers in the west to access jobs and services within 30 minutes, and will help

shape the sustainable growth of the area. The extension of the existing train line from Leppington to WSA-Badgerys Creek Aerotropolis will connect the WSA to the existing train network and provide additional public transport capacity in south west Sydney.

The WSA-Parramatta train link will reduce journey times between these centres and mean each of the three cities are connected by turn-up-and-go train services. This will enable customers across Greater Sydney to have convenient access to efficient, reliable and high capacity transport between the three Metropolitan centres, and will enable more customers in the Central River City and the Western Parkland City to access jobs and services within 30 minutes.

Upgrades on T1, T2, T4 and T5 lines, including Advanced Train Control System deployment will improve capacity and reliability.

Suburban passenger train services extended south of Macarthur will support population and jobs growth in the Western Parkland City through providing higher capacity public transport.

Mass transit/ train network in 20yrs with initiatives for investigation

2036

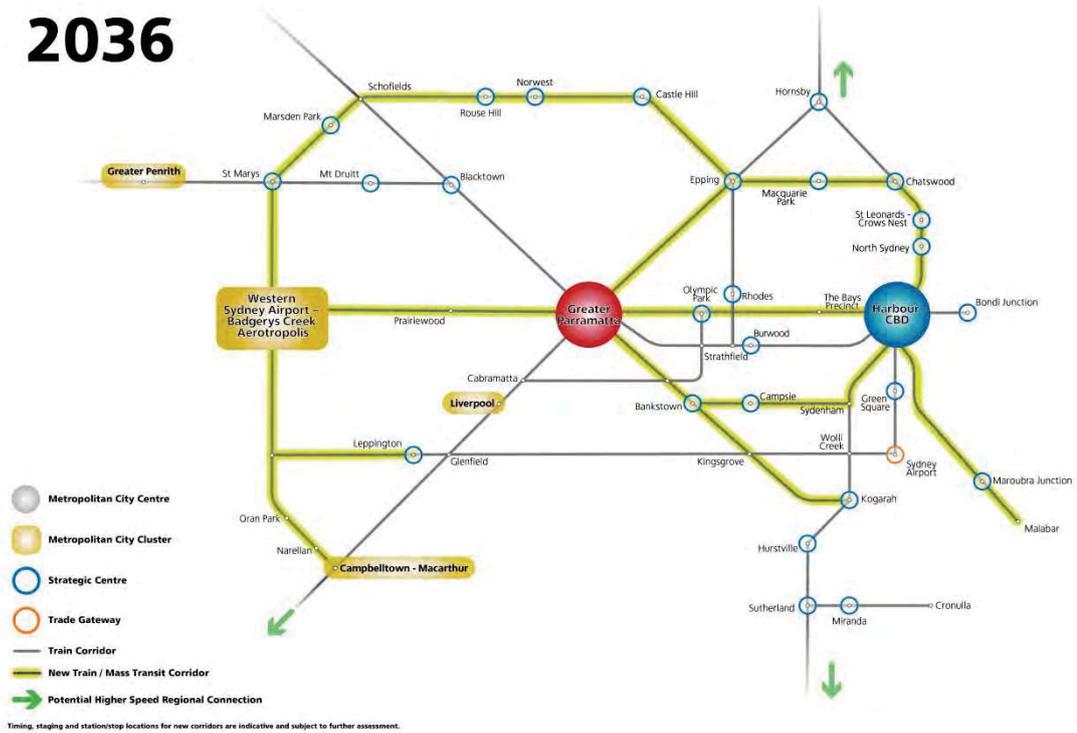


Figure 32 Greater Sydney mass transit/ train network – for investigation (10-20 years)

Initiatives for investigation (10-20 years):

- Mass transit/ train link to South East
- Parramatta-Epping mass transit/ train link
- Parramatta-Kogarah mass transit/ train link

Benefits for customers:

Investment in higher capacity public transport links particularly in the South East of the Eastern Harbour City will support urban renewal initiatives, and support 30 minute access by providing additional public transport services in the south east corridor.

New north-south mass transit/ train links to Greater Parramatta will increase the number of people that can access the Central River City within 30 minutes. This will support jobs growth in Parramatta and helps to manage pressure on transport links in the east by spreading demand across the city.

Mass transit/ train network in 40yrs with visionary initiatives

2056

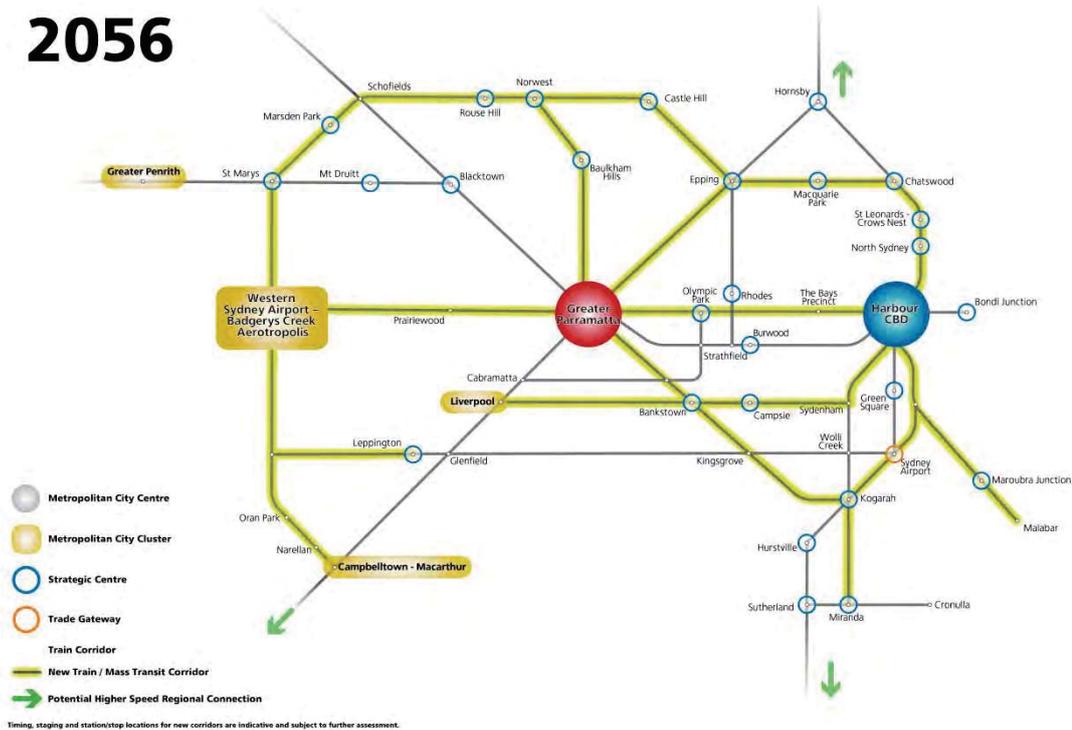


Figure 33 Greater Sydney mass transit/ train network – for investigation (20+ years)

Visionary initiatives (20+ years):

- Extension of South East mass transit/ train link to Miranda
- Parramatta-Norwest mass transit/ train link
- Sydney Metro City and Southwest extension to Liverpool

Benefits for customers:

The long-term network vision provides for a connected network within each of the three cities and addresses long-term capacity constraints. In the east, extension of a new south east mass transit/ train link to Kogarah and Miranda will provide longer-term capacity relief on the T4 Illawarra Line and support urban renewal. The Miranda link is a potential connection from the CBD with one spur going to the South East (Malabar) and the second going to Miranda (Sutherland) to facilitate higher frequencies expected on the mass transit/ train network between the Central River City and the Eastern Harbour City.

The Parramatta-Norwest mass transit/ train link will support longer-term population growth on this corridor, currently served by bus services. This will help to maintain 30 minute access to Parramatta from Norwest.

The extension of the existing train line from Bankstown to Liverpool will provide higher capacity transport connections between Strategic Centres to support population and jobs growth, and provide additional public transport capacity in south west Sydney.

Intermediate transit network – overview of potential future intermediate corridors

Intermediate transit includes buses, ferries, light rail and point-to-point transport such as taxis and rideshare. It has a key role in providing access for customers to the train network and serving customers on corridors where trains do not operate. These roles underpin our vision for the future intermediate transit network as one that will provide coverage for customers across Greater Sydney, be easy-to-understand and well-integrated with the train network.

As Greater Sydney transitions to a metropolis of three cities, public transport will play an increasingly important role in enabling customers to access their nearest Metropolitan and Strategic Centre within 30 minutes and travel across the city. This requires our public transport system to not only support reliable and efficient access to centres but also to reach destinations across Greater Sydney efficiently and reliably.

Intermediate transit will support this by performing two critical roles:

- Providing frequent, reliable and efficient transport between local areas and nearby train stations where customers can access high capacity transport to travel to their nearest centre and other destinations across Greater Sydney
- Providing direct access to centres for customers on corridors where trains do not operate.

The future intermediate transit network will enable this by providing coverage across Greater Sydney through a combination of strategic routes and local routes, being easy-to-understand and connecting to interchanges on train lines. This means that new routes in the Western Parkland City will be investigated to support growth, additional connections to Greater Parramatta will be investigated, including light rail extensions to support urban renewal, and new routes will be investigated in the Eastern Harbour City to support more efficient access to train corridors. As the train network grows, the intermediate transit network will also evolve to enable customers to reach their nearest station.

Intermediate transit network – staging of initiatives and benefits for customers

Current network and committed initiatives

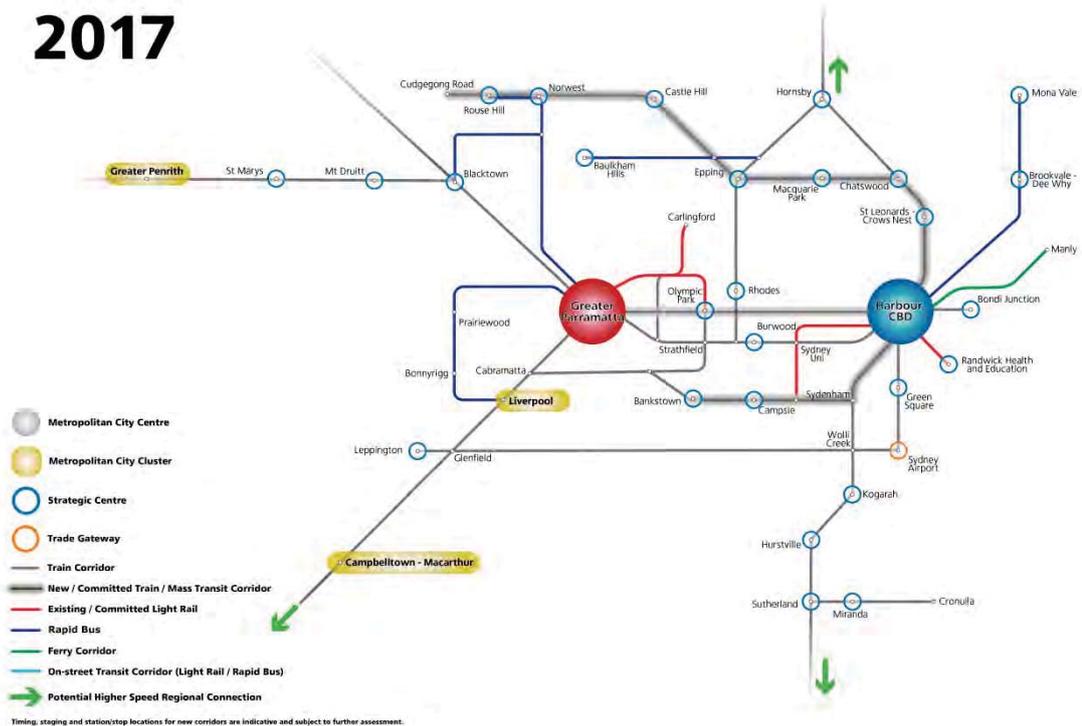


Figure 34 Greater Sydney intermediate network - Committed (0-10 years)

Committed initiatives:

- CBD & South East Light Rail (CSELR)
- Northern Beaches B-Line
- Parramatta Light Rail – Stages 1 and 2 (subject to Final Business Case)

Benefits for customers:

New intermediate transit links in the Eastern Harbour City will improve 30 minute access to centres and deliver high frequency services for customers on key corridors where there is no train line.

The CBD & South East Light Rail will connect Randwick and Kingsford with the Harbour CBD, providing an efficient, frequent and reliable service for customers in the south east. It will also improve the amenity of the Harbour CBD, with significant sections of George Street to be open to pedestrians.

Northern Beaches B-Line will deliver high frequency double-decker bus services on the Northern Beaches to Harbour CBD corridor. Infrastructure initiatives will provide more priority for buses, improving journey times and reliability for customers.

Parramatta Light Rail will boost transport capacity and will support urban renewal in areas around Greater Parramatta.

Network in 10yrs with initiatives for investigation

2026

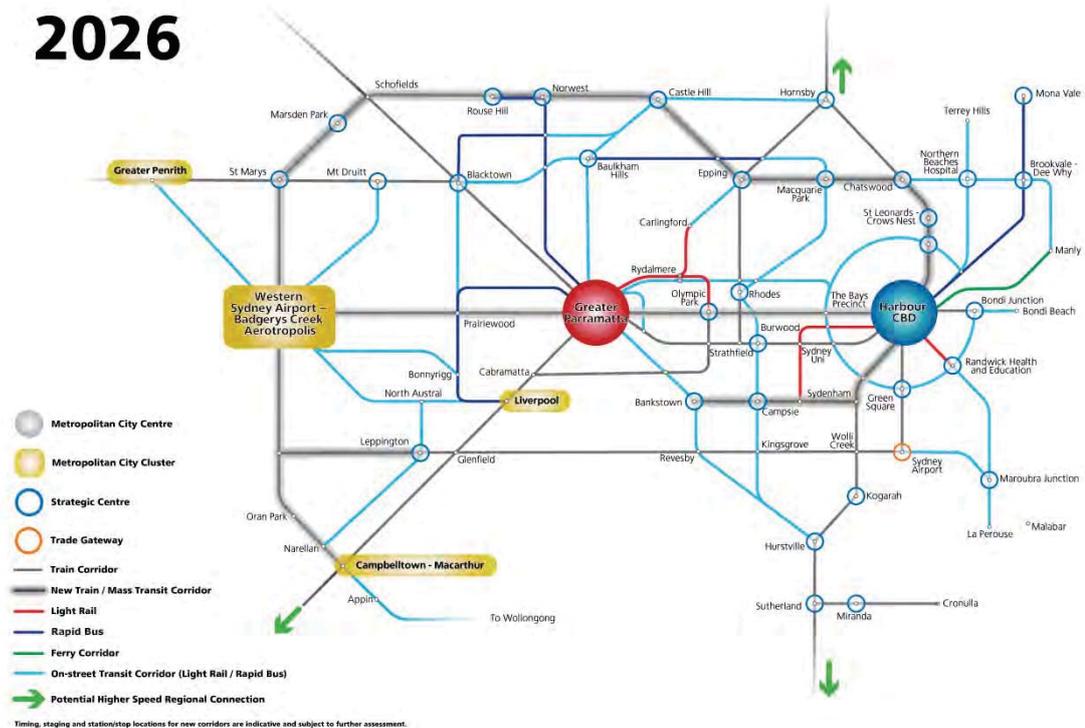


Figure 35 Greater Sydney intermediate network – for investigation (0-10 years)

Initiatives for investigation (0-10 years):

- Parramatta Road and Victoria Road transport improvements
- Parramatta T-Way to T-Way Link
- Infrastructure to support rapid bus connections between WSA, Liverpool, Penrith, Blacktown and Campbelltown-Macarthur (for priority planning)
- Service changes to connect to new train lines.
- New / improved services on key routes across Greater Sydney including:
 - Parramatta to Bankstown to Hurstville / Kogarah rapid bus link
 - Green Square to La Perouse rapid bus link
 - Harbour CBD to Green Square mass transit link: Botany Road
 - Eastern Suburbs to Inner West rapid bus links: Randwick to Sydney University to The Bays Precinct; Maroubra Junction to Sydney Airport to Marrickville
 - Northern Beaches and Chatswood: improved bus services
 - Between WSA, Liverpool, Penrith, Blacktown and Campbelltown-Macarthur: improved bus connections (for priority planning)

- Between South West Sydney and Illawarra: improved bus connections

Benefits for customers:

Upgrades to transport corridors will improve public transport capacity and reliability, and support 30 minute access to centres by public transport.

As new train links become operational, buses will connect to stations, supporting 30 minute access to jobs and services. Continued investment in strategic public transport links around Greater Parramatta, including the T-way to T-way links, will improve 30 minute access and will help to manage bus volumes within the centre of Parramatta.

Network in 20yrs with initiatives for investigation

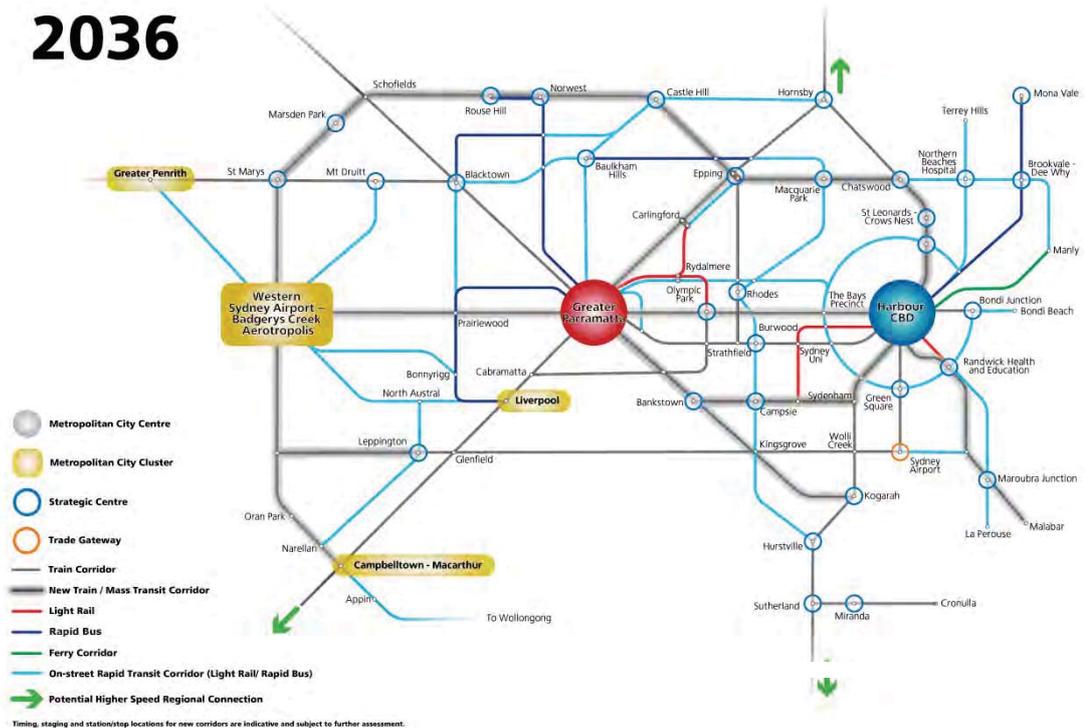


Figure 36 Greater Sydney intermediate network – for investigation (10-20 years)

Initiatives for investigation (10-20 years):

- CBD & South East Light Rail (CSELR): extension to Maroubra Junction
- Extension of Inner West Light Rail to Bays Precinct
- Parramatta Light Rail extensions
- Western Parkland City bus interchange (south of WSA)
- New services on key routes across Greater Sydney

- Service changes to connect to new train lines.

Benefits for customers:

Extension of the CSELR to Maroubra Junction will support urban renewal and enable future connections to the South East.

A light rail connection to the Bays Precinct will support the renewal of this important area and manage patronage growth on the Inner West Light Rail. Sydney Metro West would provide mass transit to the Bays Precinct, while investigations into light rail in the area would centre on complementing local transport connectivity. We will also investigate extensions of Parramatta Light Rail to support urban renewal on this corridor.

As new train links are delivered, bus services will be reconfigured so that they provide faster access to train lines and enable more people to access their nearest Metropolitan City Centre within 30 minutes.

Network in 40yrs with visionary initiatives

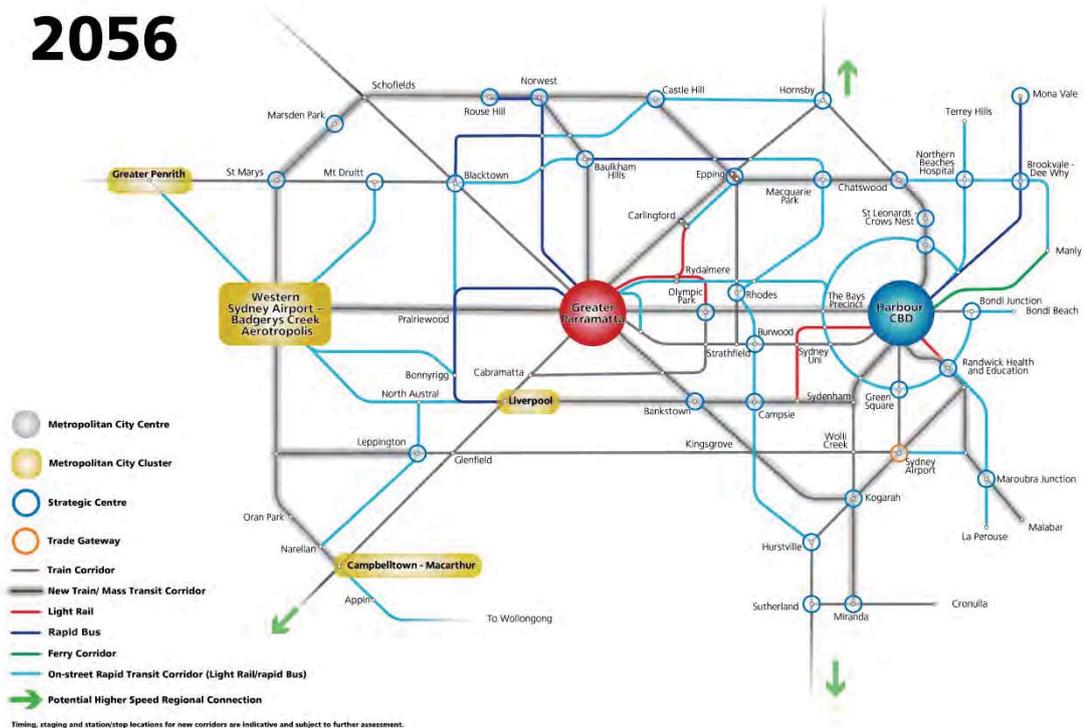


Figure 37 Greater Sydney intermediate network – for investigation (20+ years)

Visionary initiatives (20+ years):

- New services on key routes across Greater Sydney
- Service changes to connect to new train lines.

Benefits for customers:

The long term intermediate transit network will be integrated with the train network, providing customers across Greater Sydney with safe, efficient and reliable access to their nearest Metropolitan and Strategic Centres.

In addition, more local corridors will have on-demand transport available. This will provide customers with a more flexible, responsive transport service for their first and last mile and help to support the long-term sustainability of the public transport network.

Bicycle network – overview of potential future bicycle network

Cycling serves the increasing number of short trips that people make around centres and local areas. These trips access shops, services, schools, entertainment and connect to train, bus, ferry or light rail. Increasing cycling has a health payback by preventing chronic disease through increasing activity and improved personal wellbeing. Cycling also helps to create places, lower carbon emissions and improve access to public transport services.

More than 11 million weekday car trips in Greater Sydney are less than 10km. Two in five bus trips are less than 5km in length. These short trips contribute to congestion on the already constrained parts of the transport network. Lack of access to safe cycling paths is currently a barrier for the 70 per cent of customers who tell us they would like to cycle more for short trips and would do so if they felt safer and more confident.

Connected cycling networks surrounding 10kms of Metropolitan City Centres and 5kms of Strategic Centres will improve the access to cycling for short trips. Many of these connections will also form part of the Principal Bicycle Network, allowing cycling customers to travel between centres across Greater Sydney. Connecting cycling access to centres will relieve congestion by attracting people to cycle as an everyday transport choice. This will result in healthier lifestyles, improve the liveability and sustainability of the city and improve access to public transport. Cycling to the train or ferry more than doubles the number of people who can reach the three cities within 30 minutes.

Customers will be able to ride to school, work, and access public transport on a connected cycling network which is easy to use, safe, legible and connected. This network will form part of Greater Sydney's Green Grid - connecting open spaces with centres and residential areas.

Bicycle network – staging of initiatives and benefits for customers

Current network and committed initiatives

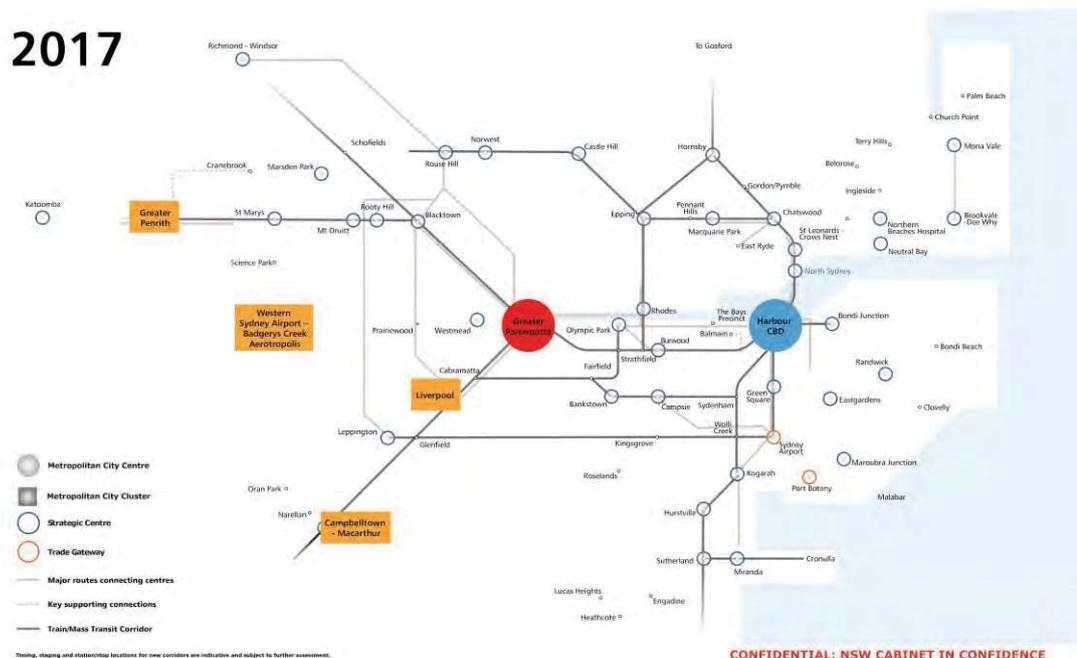


Figure 38 Greater Sydney bicycle network – committed (0-10 years)

Committed initiatives:

- Western City - Priority Cycleway links connecting Liverpool, Blacktown and Penrith, including the Nepean River Green Bridge
- Central City - Priority Cycleway links to Greater Parramatta and Sydney Olympic Park including through Carlingford and Parramatta North
- Eastern City - Priority Cycleway links near the Harbour CBD including the Inner West Greenway and Sydney Harbour Bridge cycleway connections
- Council partnership program to improve local walking and cycling connections.

Benefits for customers:

Committed Priority Cycleway projects are delivering the major missing links needed to more safely connect the growing number of people cycling in inner Sydney, Parramatta, Penrith, Blacktown and Liverpool. Council partnership programs are delivering local bicycle infrastructure. Bicycle parking is being rolled out at transport interchanges which is improving options and extending the reach of public transport.

Network in 10yrs with initiatives for investigation

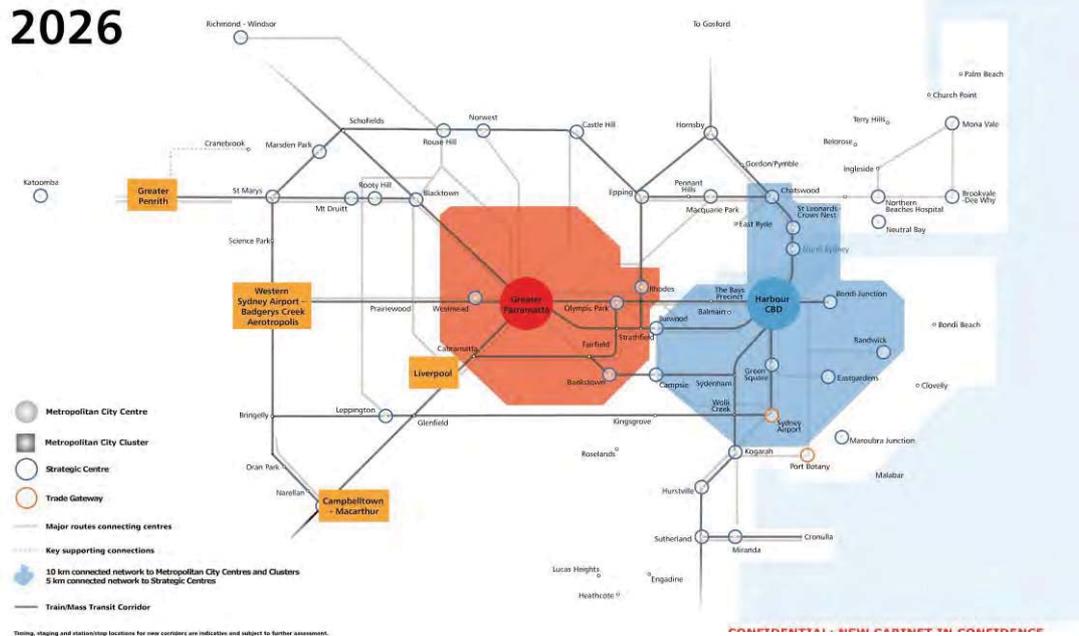


Figure 39 Greater Sydney bicycle network – for investigation (0-10 years)

Initiatives for investigation (0-10 years):

- Inner Sydney Regional Bike Network within 10kms of the Harbour CBD
- Safe cycleway network within 10kms of Parramatta
- Sutherland to Cronulla Active Transport Link
- State Infrastructure Multi Modal Corridor Program –delivering cycling routes within state owned assets
- Precinct Improvement Program - provide bicycle parking at interchanges and partner with developers to provide cycling end of trip facilities within precincts

Benefits for customers:

A connected cycle network to the Harbour CBD and Greater Parramatta improves safety and convenience of cycling around these centres increasing liveability through place-making.

Walking and cycling network coverage will be improved by using state held corridors for public transport, pipelines, waterways, crown land and service easements for bicycle network infrastructure.

Strategic road network – overview of potential future road corridors

With the growth of Greater Sydney, the share of trips by public transport and the share of freight moved by train will need to increase to enable efficient and reliable journeys and support 30 minute access to centres. However, roads will continue to have an important role in Greater Sydney, supporting freight, on-road public transport and trips best served by car, and – in some places – being destinations that people visit to shop and eat. This will require a network that is easy-to-understand, has a clear hierarchy of roads to support different types of journeys and balances movement and place needs.

The road network in Greater Sydney is the city's largest transport asset and carries the majority of Greater Sydney's transport and freight task. Roads serve two primary roles for our customers:

- They enable the movement of people and goods, including private vehicles, trucks, buses, light rail or those walking or cycling.
- Our roads also provide destinations in their own right where activities occur, supported by the adjacent land use. These places attract people for a range of activities and may include shopping streets, transport interchanges and employment centres which play an important role in the economy.

The future road network will support these functions by:

- Being easy-to-understand – the strategic road network will form the backbone of the road network and support cross-city movements for freight and other vehicles. A number of committed initiatives will support the expansion of the strategic road network, including WestConnex, NorthConnex, and the Western Sydney Infrastructure Plan. A new bypass of the Harbour CBD (that connects to motorways to the Northern Beaches and to the south of Greater Sydney) is also a committed project, subject to Final Business Case.
- We will investigate a range of future motorways to address missing links and support the growth of the Western City, including the Outer Sydney Orbital to link WSA-Badgerys Creek Aerotropolis with Wollongong and the Central Coast, to reduce traffic on local roads. These links will be technology-enabled to support future forms of mobility.
- Balancing movement and place needs – the motorway network will enable safe, efficient and reliable movements across the city. This will mean that, on roads in centres or local areas where there is a high level of pedestrian activity, these roads will better support places for people. They can also support local journeys for freight and by public transport or car.

New roads will incorporate smart technology to equip them for use by CAVs and to support improved performance and safety outcomes.

Although new road infrastructure will play an important part in supporting the growth of the city, better using existing roads through smart technology and prioritising more efficient vehicles, such as buses and freight, will also be essential.

Strategic road network – staging of initiatives and benefits for customers

Current network and committed initiatives

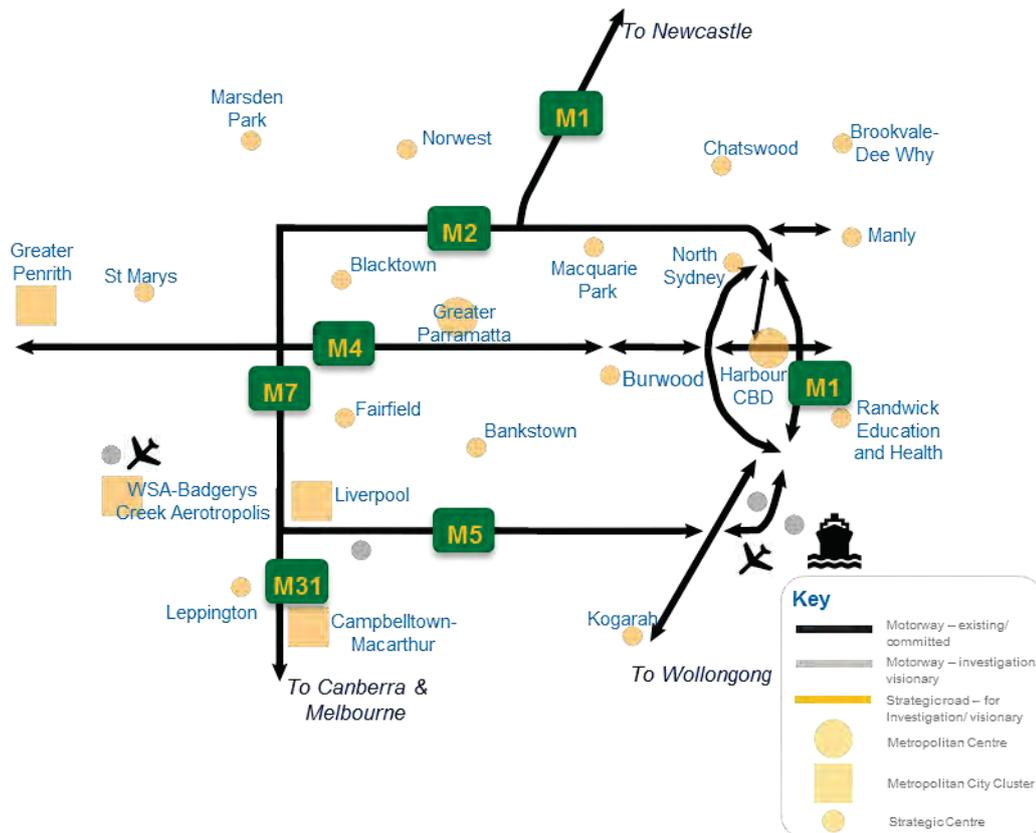


Figure 42 Greater Sydney strategic road network – committed (0-10 years)

Committed initiatives:

- NorthConnex
- WestConnex
- Western Sydney Infrastructure Plan
- Western Harbour Tunnel and Beaches Link (subject to Final Business Case)
- F6 - WestConnex to President Ave, Kogarah (subject to Final Business Case).

Benefits for customers:

New motorway connections in the Eastern and Central Cities are already under construction and will enable safe, reliable and efficient movement around the city while enabling local roads to become better places. WestConnex will provide additional road capacity for the movement of goods between freight precincts in the Western Parkland City and centres in the Eastern Harbour City, including Port Botany. NorthConnex will connect the M1 Pacific Motorway with the Greater Sydney motorway network, enabling

more efficient movements of goods to and from regional NSW. In the Western Parkland City, the Western Sydney Infrastructure Plan will ensure key roads are in place to support access to Western Sydney Airport and surrounding centres. Corridors will also be protected for future roads, such as the Outer Sydney Orbital.

Western Harbour Tunnel will provide an inner bypass of the Harbour CBD, providing additional capacity on the nation's busiest transport corridor and enabling roads in and around the CBD to be better places for people. Western Harbour Tunnel and Beaches Link will provide faster journeys for public transport, freight and cars travelling between the Northern Beaches and the Harbour CBD and other centres in the Eastern Harbour City. This will improve
30 minute access to jobs and services for our customers.

The proposed F6 - WestConnex to President Avenue, Kogarah, will provide better access for people and goods travelling between southern Sydney, the Illawarra and other parts of Greater Sydney.

Strategic road network in 10yrs with initiatives for investigation

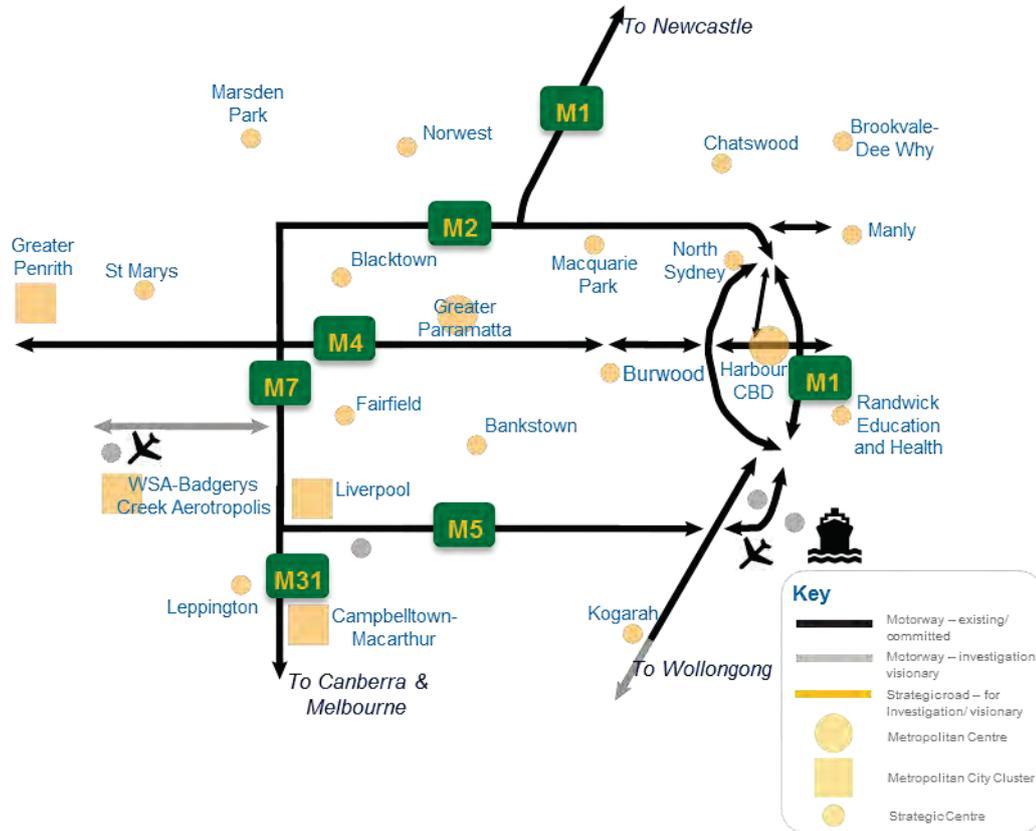


Figure 43 Greater Sydney strategic road network – for investigation (0-10 years)

Initiatives for investigation (0-10 years):

- F6 – President Avenue, Kogarah to Loftus (for immediate detailed planning)
- Parramatta Inner Ring Road
- Western Sydney Infrastructure Plan (M12 motorway)
- Appin and Picton Road improvements
- Bells Line of Road improvements
- Corridor protections in Western Parkland City.

Benefits for customers:

The F6 – President Avenue, Kogarah to Loftus will provide better access for people and goods travelling between southern Sydney, the Illawarra and other parts of Greater Sydney.

Investment in capacity of the Parramatta inner ring road will improve access around Parramatta and support better places by enabling local roads to support local journeys.

Early investment in strategic road upgrades of Appin and Picton Road will support growth in the Wilton and Greater Macarthur Priority Growth Areas and improve access to the Illawarra. Improvements to the Bells Line of Road will boost the safety and efficiency of journeys between Greater Sydney and regions to the west, and the protection of future transport corridors in the Western Parkland City will support the affordable delivery of passenger and freight infrastructure in the future.

Network in 20yrs with initiatives for investigation

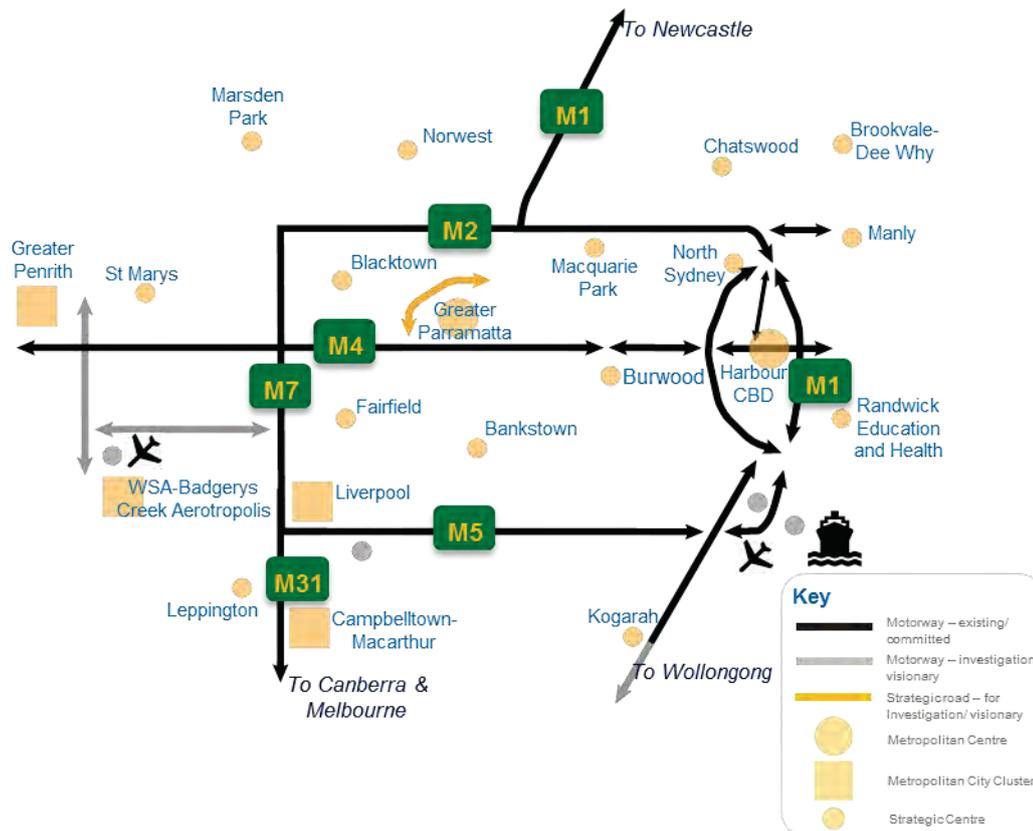


Figure 44 Greater Sydney strategic road network – for investigation (10-20 years)

Initiatives for investigation (10-20 years):

- Parramatta Outer Ring Road
- Outer Sydney Orbital motorway from Great Western Highway to WSA-Badgerys Creek Aerotropolis

Benefits for customers:

In the 10-20 year horizon, the primary network investment to be investigated will be the first stage of the Outer Sydney Orbital motorway. The Orbital will ultimately provide an outer bypass of Greater Sydney, connecting the Central Coast, Western Parkland City and Illawarra. The first stage will connect the Great Western Highway near St Marys with WSA-Badgerys Creek Aerotropolis, boosting access to the airport and the jobs surrounding it as it continues to grow.

The Parramatta Outer Ring road will provide a bypass of Parramatta for customers travelling from the west to centres north of Greater Parramatta. This will reduce pressure on roads around Parramatta, enabling them to support local journeys and be places for people.

Network in 40yrs with visionary initiatives

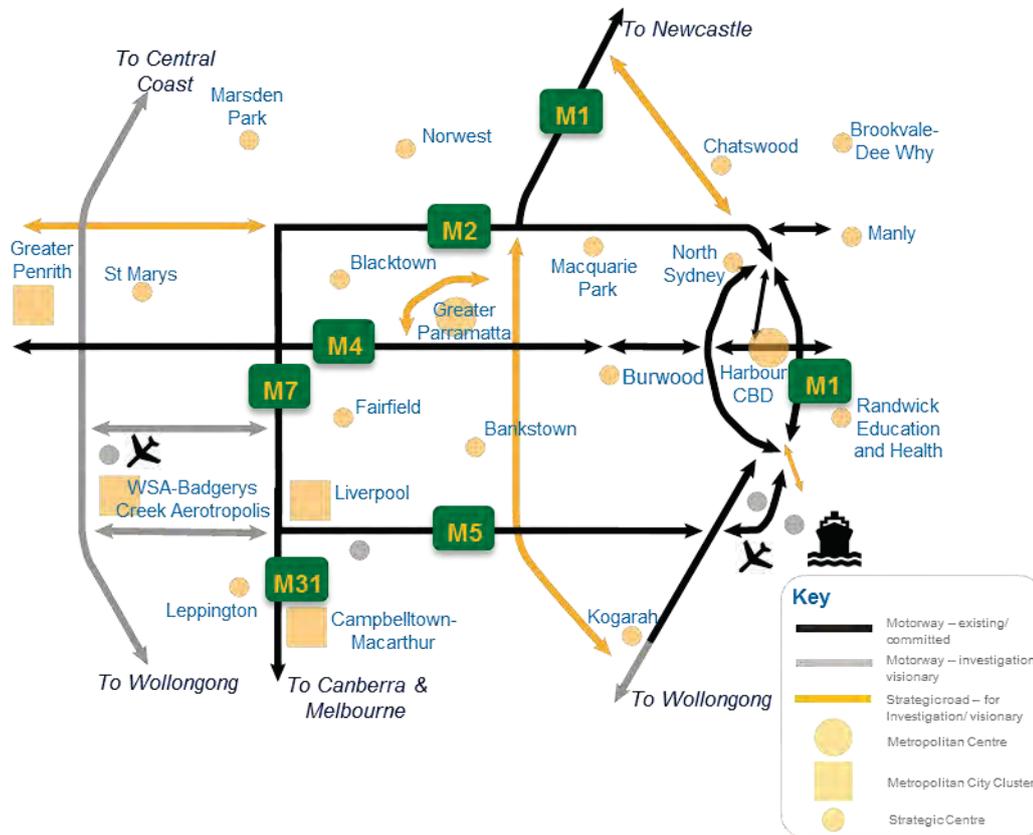


Figure 45 Greater Sydney strategic road network – for investigation (20+ years)

Visionary initiatives (20+ years):

- Outer Sydney Orbital motorway from Great Western Highway to Central Coast
- Outer Sydney Orbital motorway from WSA to Illawarra
- M5 motorway extension from Liverpool to Outer Sydney Orbital
- Bells Line of Road-Castlereagh Connection
- Address long term capacity constraints to Port Botany and South East
- Central City strategic road corridor (NorthConnex to Southern Sydney)
- WSA Outer and Inner Ring Roads

Benefits for customers:

The longer-term initiatives will address remaining missing links in the motorway network, providing a grid of high-quality movement across the three cities. The Outer Sydney Orbital will ultimately provide an outer bypass of Greater Sydney, connecting

the Central Coast, Western Parkland City and Illawarra. By extending the M5 to the Outer Sydney Orbital this will support the efficient movement of road freight to and from Moorebank Intermodal Terminal.

The connection of Bells Line of Road-Castlereagh will connect to the M7 and will boost the safety and efficiency of journeys between Greater Sydney and regions to the west.

Capacity constraints at Port Botany and the South East will be addressed through upgraded train and road links.

Investment in a north-south strategic road corridor east of Greater Parramatta will improve access and support better places by enabling local roads to support local journeys. Similarly, new ring roads around the WSA-Badgerys Creek Aerotropolis will provide convenient freight access to centres supported through a range of local network initiatives.

Strategic freight network – overview of potential future freight corridors

The freight task in Greater Sydney is forecasted to expand, with the volume of goods moved expected to grow faster than the population. Supporting the safe, efficient and reliable movement of goods around Greater Sydney will require a high capacity network for cross-city freight movements as well convenient access to centres. The future network will support this through an expanded motorway network that will support access to centres across Greater Sydney and improved rail connections between ports and freight distribution centres.

The total freight task within Greater Sydney is expected to nearly double over the next 40 years due to a growing population, higher living standards and online consumerism. The container freight task alone is projected to grow by 176% over the next 40 years to 39.1 Mt per annum.

The growth in the movement of goods will require a freight network that can support safe, efficient and reliable journeys between centres and freight precincts across the city as well as between ports in the east and intermodal terminals in the Western Parkland City. In addition to policy initiatives and better using existing infrastructure through new technology, there will be investment in the motorway network. This includes committed initiatives, such as WestConnex, NorthConnex, and Western Harbour Tunnel and Beaches Link (subject to Final Business Case) to support cross city freight movements and better places in our centres.

WestConnex will provide additional road capacity for the movement of goods between freight precincts in the Western Parkland City and centres in the Eastern Harbour City, including Port Botany. NorthConnex will connect the M1 Pacific Motorway with the Greater Sydney motorway network, enabling more efficient movements of goods to and from regional NSW. Motorways for investigation include the Outer Sydney Orbital motorway to connect freight precincts in the Western Parkland City with regions to the north and south of Greater Sydney.

We will also provide freight customers with 24/7 freight rail access between ports and intermodal terminals to help manage road congestion. To support this, the duplication of the Port Botany freight line will be investigated forming a dedicated connection to Western Sydney via the Western Sydney Freight Line. In addition, the proposed Outer Sydney Orbital freight rail line and the Maldon-Dombarton freight rail link will provide dedicated freight rail connections between Greater Sydney and regions to the north and south. This will enable existing train lines to the north and south to support the forecast growth in passenger services without compromising freight movements. Should Port Botany reach capacity and Port Kembla be required to support container movements, these new links will also enable goods to be moved safely, efficiently and reliably between Port Kembla and intermodal terminals in the Western Parkland City.

Convenient freight access to centres will also be investigated through a range of local network initiatives. This includes new ring roads around Greater Parramatta and the WSA-Badgerys Creek Aerotropolis. Complementing this will be other initiatives, such as new freight consolidation hubs near centres and initiatives to encourage more off-peak freight deliveries.

Strategic freight network – staging of initiatives and benefits for customers

Current network and committed initiatives



Figure 46 Greater Sydney strategic freight network – committed (0-10 years)

Committed initiatives:

- NorthConnex
- WestConnex
- Western Harbour Tunnel and Beaches Link (subject to Final Business Case)
- F6 - WestConnex to President Ave, Kogarah (subject to Final Business Case).

Benefits for customers:

New motorway connections in the Eastern and Central Cities are under construction and will enable safe, reliable and efficient movement around the city. WestConnex will provide

additional road capacity for the movement of goods between freight precincts in the Western Parkland City and centres in the Eastern Harbour City, including Port Botany. NorthConnex will connect the M1 Pacific Motorway with the Greater Sydney motorway network, enabling more efficient movements of goods to and from regional NSW.

Network in 10yrs with initiatives for investigation



Figure 47 Greater Sydney strategic freight network – for investigation (0-10 years)

Initiatives for investigation (0-10 years):

- M12 motorway
- Bells Line of Road improvements
- Duplication of Port Botany freight rail line (in collaboration with the Commonwealth)
- Northern Sydney Freight Corridor Stage 2
- Southern Sydney Freight Line improvements

- Appin and Picton Road improvements
- Corridor protections in Western Parkland City

Benefits for customers:

In addition to the proposed motorways (outlined in the roads section), duplication of the Port Botany Rail Line will be investigated. This will support the growth in container movements between the Western Parkland City and Port Botany by providing a higher capacity dedicated freight rail link between the port and intermodal terminals.

Stage 2 of the Northern Sydney Freight Corridor will support separation of freight and passenger trains by investing in freight capacity between Sydney and the Central Coast. Improvements to the Southern Sydney Freight Line will support the growth in containers being moved by rail on this corridor (expected from Moorebank Intermodal Terminal) by better separating freight and passenger trains in the south-west of Greater Sydney.

Network in 20yrs with initiatives for investigation



Figure 48 Greater Sydney strategic freight network – for investigation (10-20 years)

Initiatives for investigation (10-20 years):

- Outer Sydney Orbital (motorway and freight rail) from Great Western Highway and Western Line to WSA
- Western Sydney Freight Line
- Maldon-Dombarton freight rail link
- Additional capacity on Southern Sydney Freight Line.

Benefits for customers:

In the 10-20 year horizon, the Western Sydney Freight Line and first stage of the Outer Sydney Orbital freight rail line will complete the dedicated east-west freight rail link in Greater Sydney, connecting Port Botany with the proposed Western Sydney

Intermodal Terminal. This will help manage road congestion and ensure freight can be separated from passenger trains on this corridor.

The Maldon-Dombarton freight rail link will enable more passenger train services to operate on the Illawarra Line without impacting freight rail services.

Network in 40yrs with visionary initiatives



Figure 49 Greater Sydney strategic freight network – for investigation (20+ years)

Visionary initiatives (20+ years):

- Address long term capacity constraints to Port Botany and South East
- Central City strategic road corridor (NorthConnex to Southern Sydney)
- Outer Sydney Orbital (motorway and freight rail) – remaining stages
- M5 motorway extension from Liverpool to Outer Sydney Orbital
- Bells Line of Road – Castlereagh Connection.

Benefits for customers:

The long term freight network will provide additional motorway connections for goods being moved by road and will provide an outer bypass of Greater Sydney, enabling better access between Greater Sydney and the regions and reducing dependence on single corridors, such as the M1 Pacific Motorway.

Regional NSW

Services and Infrastructure Plan

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About this plan

The Draft Regional Services and Infrastructure Plan sets a 40 year vision for transport in Regional New South Wales to support liveable communities and productive economies. Our aspiration for Regional NSW is to maximise its potential recognising the diversity between regions in their natural assets, strong communities, local skills and globally competitive industries.

This Plan includes:

- 9 regions that cover the whole of the state outside the Greater Sydney metropolitan region – Central Coast, Hunter, North Coast, New England North West, Central West and Orana, Far West, Riverina Murray, South East and Tablelands and Illawarra Shoalhaven
- Each of these regions supports one or two Regional Cities and a similar number of Regional Centres – each is key to supporting the hub and spoke vision of this Plan over the next 40 years
- Regional Cities in NSW include the major Cities of Newcastle, Gosford and Wollongong, as well as Tweed Heads, Lismore, Coffs Harbour, Port Macquarie, Armidale, Tamworth, Maitland, Dubbo, Orange, Bathurst, Griffith, Wagga Wagga, Albury, Shellharbour, Nowra and Queanbeyan
- A number of Regional Centres that will continue to play an important, and perhaps increasing role, in servicing local communities.



Figure 1: The population of Regional NSW

Supporting the growing importance of Regional Cities and Centres

Regional NSW is forecast to grow by 400,000 people by 2036 and then a further 200,000 by 2056. This growth will be predominantly be in Newcastle, the Central Coast and Wollongong. Strong growth is also expected in the coastal regions north and south of these areas, with their Regional Cities and Centres growing. For inland regions, Regional Cities and Centres will see growth, while their surrounding towns will see flat or declining population. The population in Regional NSW will also be ageing, creating additional challenges particularly in more remote communities.

As NSW continues to grow, all Regional Cities will play larger roles in service provision for their population catchments. Some Regional Cities will have stronger links to capital and Regional Cities in other states. While other Regional Cities will evolve to develop greater global connections with the Asia/Pacific Region through their nationally significant infrastructure.

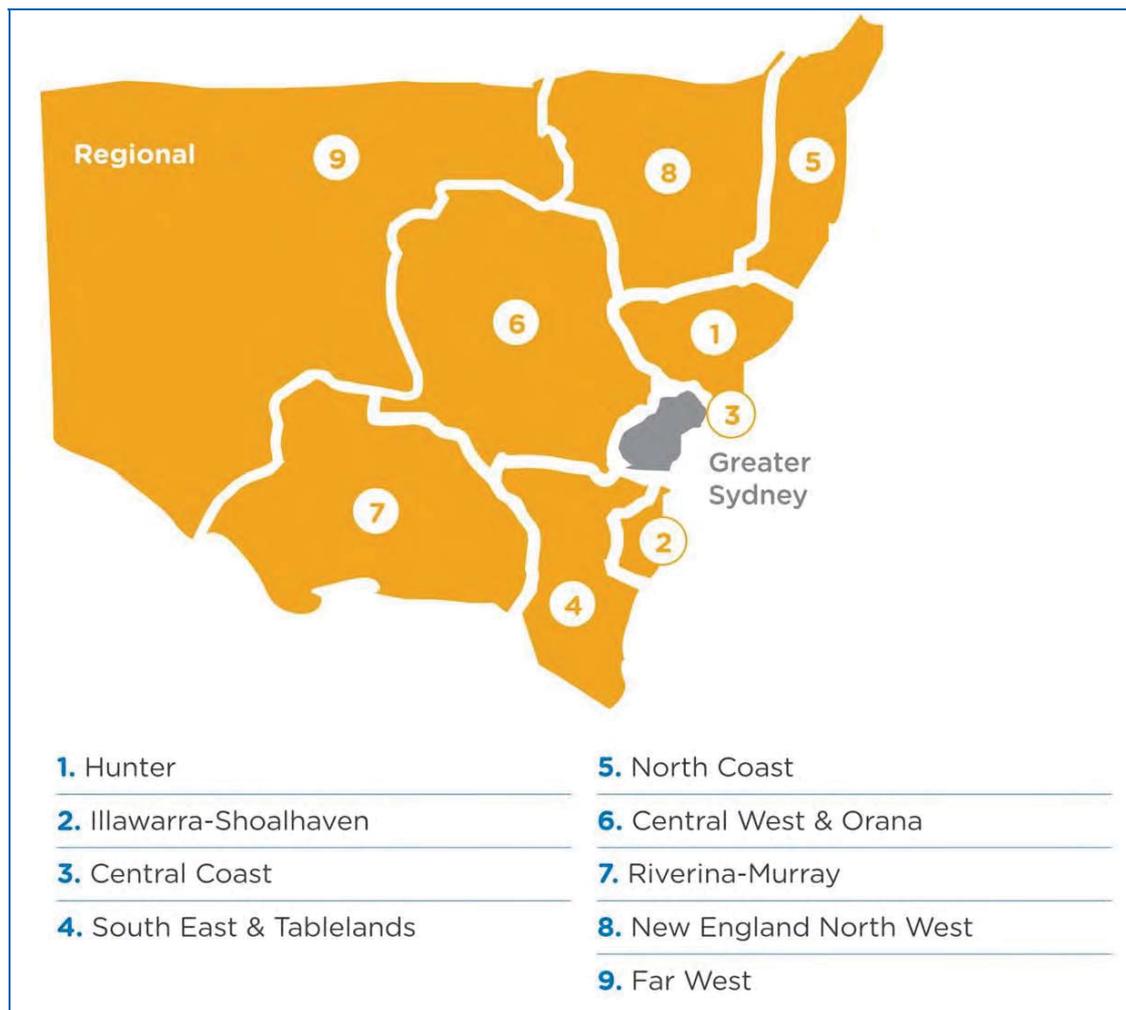


Figure 2: Regional NSW

A hub and spoke model of service delivery

Introducing a new Regional Transport Network Model

This Plan proposes that the most effective way of providing better transport to more potential customers in Regional NSW is through the development of a 'hub and spoke' network model radiating out from Regional Cities rather than a network just focused on Sydney. This will capitalise on the role that Regional Cities and Centres play as hubs for employment and services such as retail, health, education and cultural activities. It will also acknowledge the importance of national and state significant transport links (or spokes) that pass through regions.

This network model will be comprised of a range of modes, reflecting the level of demand and distance travelled. The foundations to achieve our vision of improved connectivity, integrated services and better use of capacity in Regional NSW are:

- A strategic framework of customer service principles to deliver greater connectivity to increase opportunities
- A hub and spoke network with multi-modal interchanges providing connections to local services
- Innovative, flexible and demand responsive services from small towns and villages

Previous regional planning has focussed on the connections of Regional Cities within a region. Whilst these will remain important, safe and efficient links to Regional Cities in adjacent regions is considered just as important as different products and services or service levels may be offered in other Regional Cities. Further, investment in transport infrastructure over the past 20 years has focussed on creating efficient north-south connections between Regional Cities. A future focus on east-west connections between the inland and coastal geographies will support the growth of population on the coast whilst also opening up tourism and trade connections to the inland regions.

Planning for a safe, efficient and reliable transport network requires an integrated whole-of-government approach, working in partnership with local communities and stakeholders to deliver integrated transport networks and places that best meet the needs of customers. Initiatives for investigation will include:

- Creating places for people – support principles of centre development, amenity enhancements, transport network connectivity, time of day management, walking and opportunities to dwell in city centres to support local identity and placemaking
- Local connectivity – improving local public transport, walking and cycling connectivity between railway station, airport, key land uses (health, education, retail, employment) and town centres
- Movement corridors – planning, design and management of major roads to be sensitive to centres and surrounding land use and planning for future bypasses using the Movement and Place principles, with whole-of-government multi-modal road and corridor planning, including 'last mile' connectivity and freight access for industry.

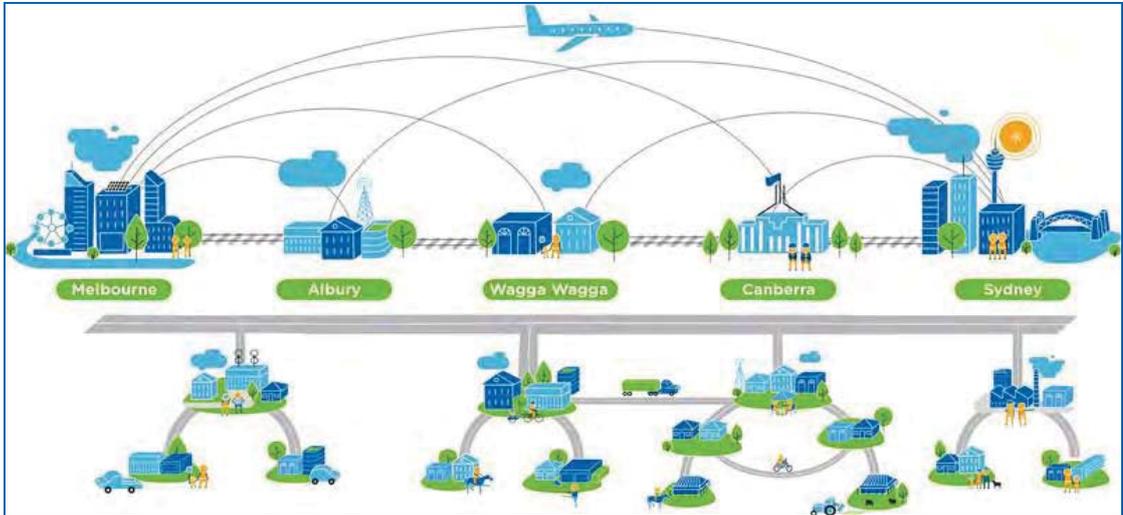


Figure 3: Moving FROM a Sydney-focused network TO a focus on your local Regional City



Figure 4: Regional NSW transport network

Investing in the future

Regional Service & Infrastructure Initiatives

We will investigate a range of initiatives extending across the 40 year timeframe of Future Transport, including both policy and service improvements as well as infrastructure improvements. These are presented for all 9 regions in NSW and include those that the NSW has committed to over the next 10 years, as well as initiatives for investigation for potential commitment or implementation over 0-10 year and 10-20 year timeframes, and visionary initiatives that may be investigated within the next 10 years but on preliminary evidence are likely to require implementation in the 20+ year timeframe. Further investigation of all initiatives will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

A strategic investment prioritisation evaluation was undertaken for each initiative, considering:

- How initiatives would serve customer needs and place-based visions over 40 years
- Multimodal corridor planning and the evolution of places, applying Movement and Place planning principles
- How well initiatives would meet future customer needs, against a range of likely scenarios, including technological and other disruptive events
- Benefits, alignment to the strategic objectives of the Regional plans, and their ability to deliver on service outcomes
- The (high level) timeframe for project need, linked to interdependencies with other initiatives.

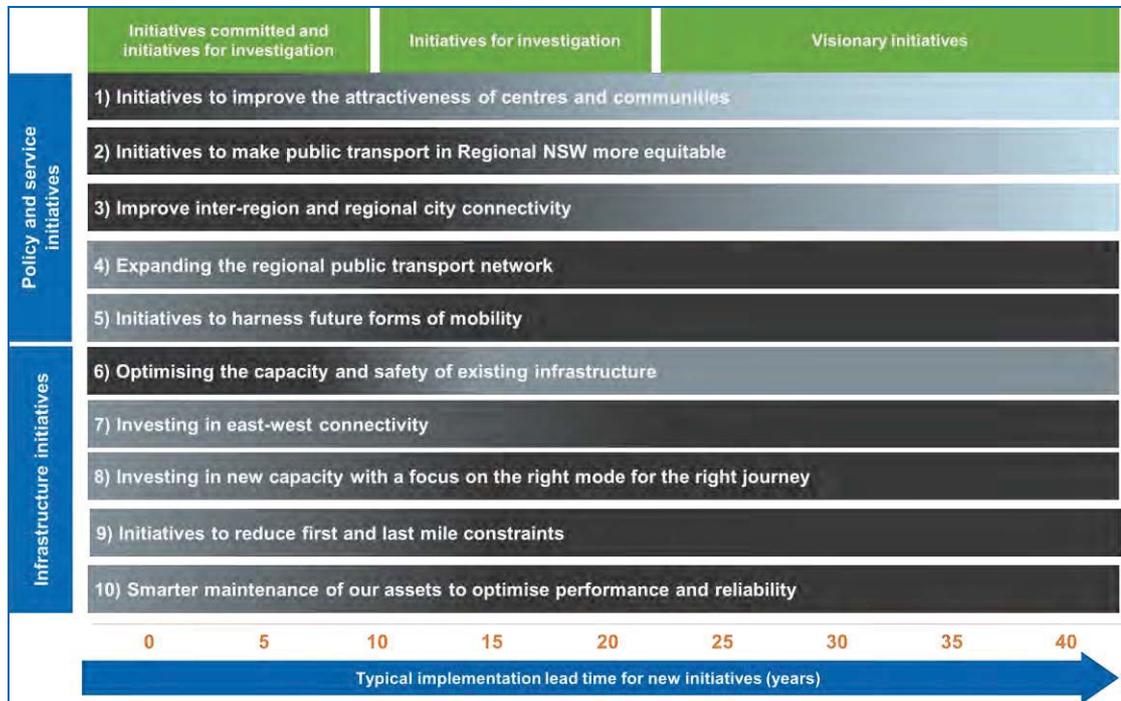


Figure 5: Initiatives to support the customer outcomes

What this means for the future of transport planning in Regional NSW...

- A new integrated whole-of-government approach to planning transport, working in partnership with local communities and stakeholders to deliver integrated transport networks and places that best meet the needs of customers
- Utilising the ‘movement and place’ framework to ensure that transport networks reflect the needs of surrounding land uses, enabling efficient and reliable movement of customers and goods as well as creating places for people
- Moving away from planning for different transport modes and customers in isolation towards personalised end to end customer experiences
- Forging stronger connections from surrounding catchments to Regional Cities and Centres and between them, rather than focussing connections on Sydney or other interstate capitals
- Development of place-based transport plans that support recent Department of Planning and Environment Regional Plans, with extensive engagement from local stakeholders.

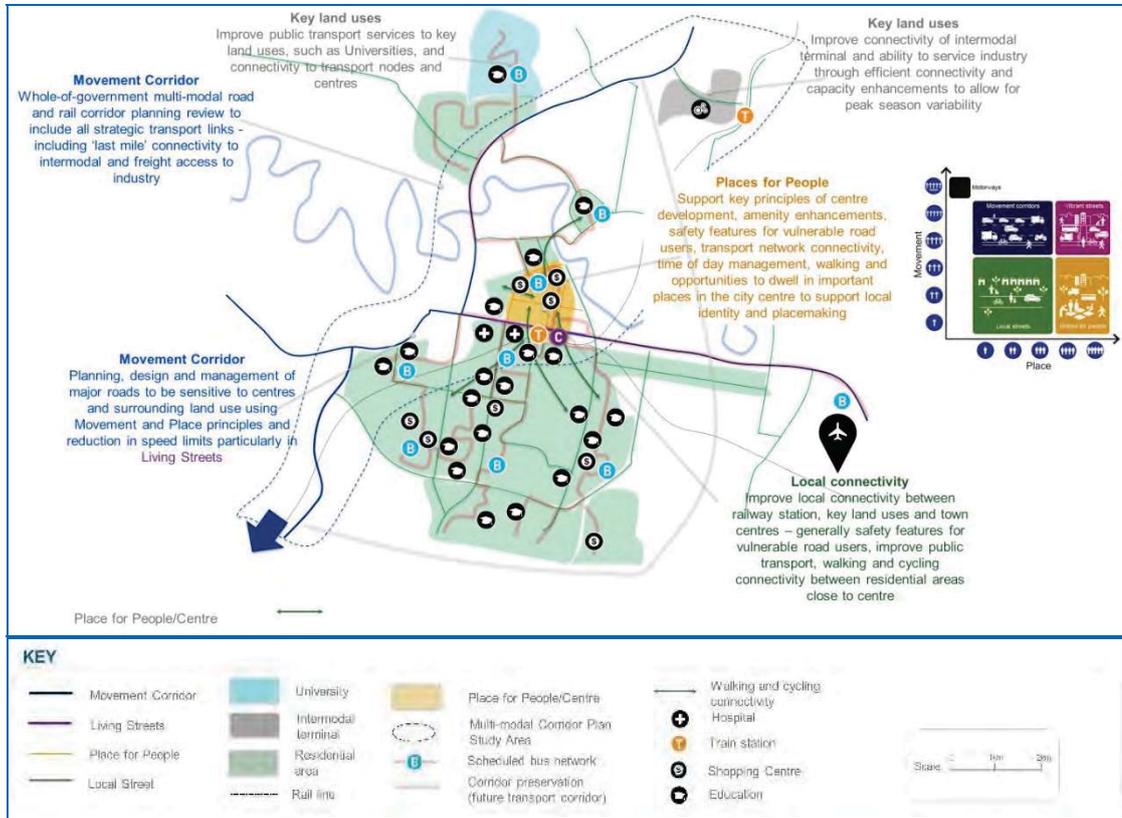


Figure 6: Movement and Place Framework for Regional Cities (Illustrative only)

Community engagement in Regional NSW

Between 15 May and 15 July 2017, Future Transport consulted across Greater Sydney and Regional NSW.

The engagement was undertaken to raise awareness and stimulate discussion on the ideas and topics to inform the Draft Future Transport Strategy and the Draft Service and Infrastructure Plans.

The key issues which arose during consultation in Regional NSW included:

- **Roads** – the importance of roads given private car use is such a dominant aspect of regional transport road use, road planning and road sharing are frequent topics of discussion together with Road Safety
- **Region to region connections** – access to major Regional Cities from centres and towns was raised in all community events as well as access to main cities e.g. Canberra
- **Timetabling** – there were numerous examples from regional communities of train timetables not suiting local needs and being more about serving people travelling from capital city to capital city
- **Enabling Regional Business** – faster connections between Regional Cities and their surrounding centres and new technologies were highly appreciated in feedback with businesses eager to hear more about electric vehicles, driverless vehicles, use of drones, and smart data to better plan transport services and potential freight services.

Engagement with a range of stakeholders and customers in Regional NSW will continue until the release of the final Future Transport 2056 in 2018.

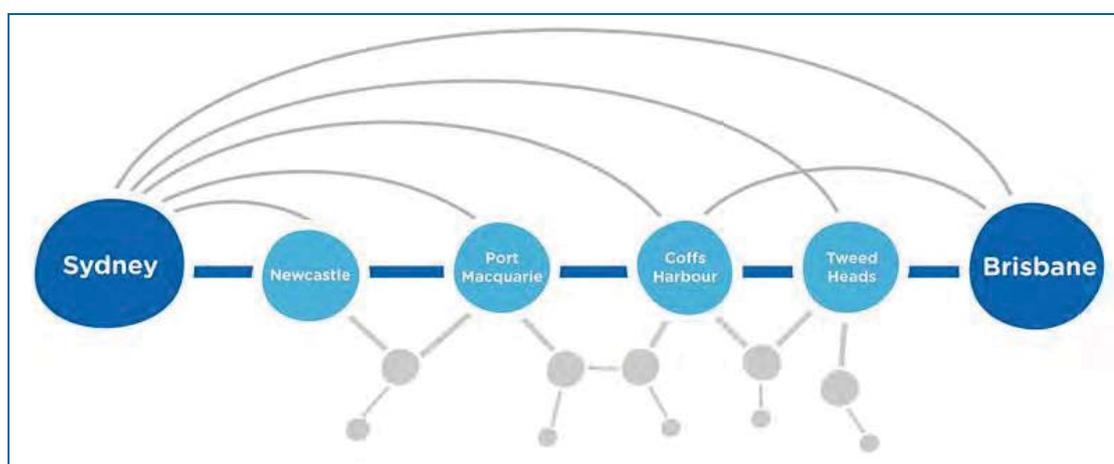


Figure 7: Improving region to region connections

SECTION 1 Introduction

This section describes the purpose of this document, defines Regional NSW and provides an overview of the objectives and customer outcomes for transport in Regional NSW

About the Draft Regional NSW Services and Infrastructure Plan



Figure 8: Overview of Draft Future Transport 2056

- The Draft Future Transport Strategy 2056 sets the vision, state-wide directions and headline initiatives that will deliver the six outcomes.
- The Draft Services and Infrastructure Plans set the customer outcomes and identify the networks and initiatives required to achieve these, including policy, service and infrastructure initiatives.

- The Supporting Plans are more detailed issues-based or place-based planning documents that will support the implementation of Future Transport 2056.

Defining Regional NSW

Diverse and dynamic communities

- Regional NSW is home to 3.1 million people which is 40% of the state's population. By 2056 it will be 3.6 million
- Regional NSW comprises four different geographies - Remote, Inland, Coastal and Outer Metropolitan - which directly influence the way transport is provided and networks structured
- 9 regions make up Regional NSW and these are consistent with those used by other NSW Government agencies, including the Department of Planning and Environment's Regional Plans
- Each region typically supports 1-2 Regional Cities, a number of Regional Centres and many towns and villages
- Some areas of Regional NSW are heavily influenced by or relate to other states and Capital Cities due their proximity particularly in cross border areas like the Tweed, Queanbeyan, Albury, the Riverina and Broken Hill.



Figure 9: Four geographies of Regional NSW

Connecting the regions

Past planning has focused on meeting needs of long distance journeys to Sydney. Future Transport will focus on connecting our Regional Cities and Centres to ensure regional communities play their role in the larger NSW and Australian narrative.

- The distances between many Regional Cities and Centres in NSW result in long journeys whether on road, by coach, train or by air
- The more distant the journey the more attractive, in regard to time savings, air travel becomes
- A future focus on improved connectivity and more efficient connections for public transport between centres, as well as air travel to their nearest capital city.

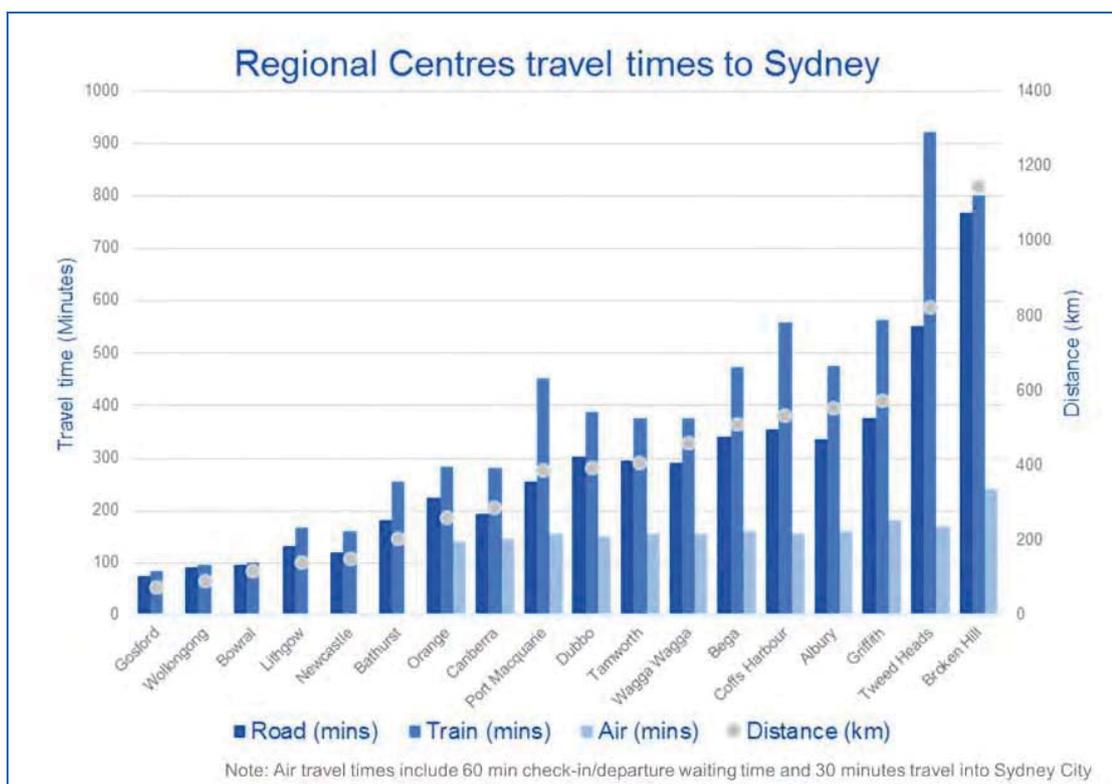


Figure 10: Travel time by mode from Regional Centres to Sydney

Overview of transport objectives and customer outcomes for Regional NSW

Our customers are at the centre of everything we do. That is why our transport plan for Regional NSW is underpinned by the outcomes customers can expect when travelling within their region – whether they be commuters, customers travelling for leisure or freight customers. The outcomes are designed to respond to

what customers have told us is important to them and underpin our plan for policy, service and infrastructure improvements.

Regional NSW transport objectives		Regional NSW customer outcomes	
1	A safe, secure and resilient transport system that efficiently connects our communities	1.	A safe transport system for every customer with zero deaths or serious injuries on the network by 2056
2	A transport system that improves productivity and supports regional economies and communities	2.	A transport system which is resilient to significant weather events including floods, fog, bush fires
3	An equitable transport system that helps to vitalise our communities	3.	Customers enjoy improved connectivity, integrated services and better use of capacity
4	Accessible transport options for all customers	4.	The appropriate movement and place balance is established enabling people and goods to move efficiently through the network whilst ensuring local access and vibrant places
5	A regional transport system that is reliable, flexible, personalised and responsive to customer needs	5.	Accessibility to employment and services such as health, education, retail and cultural activities within Regional Cities and Centres
6	A transport system that is affordable and makes best use of available resources and assets	6.	A transport system that adapts to and embraces new technology
		7.	Changes in land use, population and demand, including seasonal changes, are served by the transport system
		8.	Flexible services are an integral part of the transport system helping to deliver reliability and the most appropriate type of service for customer needs
		9.	Support the development of the Global Gateway Cities of Newcastle and Canberra
		10.	Improved efficiency of the network to/from/within the two Satellite Cities of the Greater Sydney by 2056 – Gosford and Wollongong

Figure 11: Overview of transport objectives and customer outcomes for Regional NSW

SECTION 2 Service and infrastructure initiatives

This section summarises the policy, service and infrastructure initiatives to support the customer outcomes, and includes initiatives that the NSW Government has committed for delivery in the next 10 years. There are also initiatives identified for investigation in the next 10 and 20 years and visionary initiatives beyond 20 years that will be subject to strategic business cases.

Initiatives to support the customer outcomes

We will investigate a range of initiatives to support the customer outcomes extending across the 40 year timeframe of Future Transport, including both policy and service improvements as well as infrastructure improvements. These include initiatives that the NSW Government has committed to (over the next 10 years), initiatives for investigation for potential commitment or implementation in the 0-10 year and 10-20 year timeframes and visionary initiatives that may be investigated within the next 10 years but on preliminary evidence are likely to require implementation in the 20+ year timeframe. Further investigation of all initiatives will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

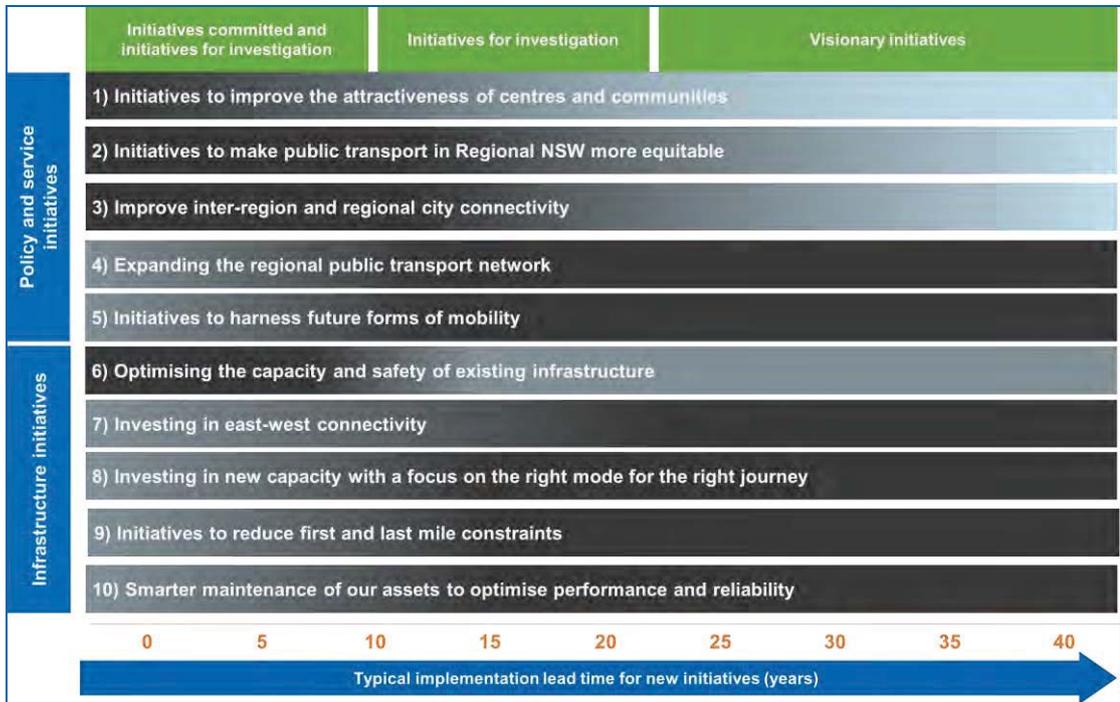


Figure 12: Initiatives to support the customer outcomes

A flexible, agile investment approach

A strategic investment prioritisation evaluation was undertaken for each proposed initiative, considering:

- How initiatives would serve customer needs and place-based visions over 40 years
- Multimodal corridor planning and the evolution of places, applying Movement and Place planning principles
- How well initiatives would meet future customer needs, against a range of likely scenarios, including technological and other disruptive events
- Benefits, alignment to the strategic objectives of the Regional plans, and their ability to deliver on service outcomes
- The (high level) timeframe for project need, linked to interdependencies with other initiatives.

This process highlighted that there is far less data available to understand current and expected future regional travel patterns, compared to that available in metropolitan Sydney. Future Transport will commit to rectifying this evidence-gap and identifying new data sources.

Our investment approach is designed to be flexible, responding to change and uncertainty. The draft timeframes are indicative, based on preliminary evidence, of when potentially these initiatives may be need to be implemented or committed.

Further investigation of all initiatives in the Draft Strategy and Plans will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

Initiatives are listed in the following categories:

Committed initiatives (0-10yrs) – initiatives that either have committed funding, are committed/ contractually committed, are for immediate detailed planning, or are part of key maintenance, renewal or safety programs. Some initiatives are subject to final business case.

Initiatives for investigation (0-10, 10-20yrs) – intended to be investigated for potential commitment or implementation within the next 20 years. Those listed in 0-10 horizon will be prioritised for more detailed investigation to determine if they are required in the next decade.

Visionary initiatives (20+ years) – longer term initiatives that may be investigated within the next 10 years, but are unlikely to require implementation within 20 years.

New state-wide initiatives for investigation

State-wide - Policy / Planning Initiatives

- Introduce seamless next generation ticketing system across Regional NSW in-line with Metropolitan Sydney which will have the added benefit of capturing transport data in regional areas
- Precinct planning to implement Movement and Place framework in Regional NSW Cities and Centres – opportunity to improve the function of transport corridors to enhance the amenity of our Centres
- Mobility as a Service (MaaS) across all transport service providers (i.e. regulated and unregulated) providing a single comprehensive source of public transport information (including for cross-border services)
- Flexible transport options available in all regions. We will explore opportunities for this to be rolled-out across NSW
- Alignment of fares in Regional NSW with those in metropolitan Sydney. This will increase equity between regions, improve social inclusion, and affordability which will encourage greater patronage of services
- Integrate Cycling and Walking Programs for Regional Cities and Centres to complete missing links, create integrated transport networks and encourage sustainable travel
- Introduce a service provider-neutral Transport Taxi Subsidy Scheme for people with disabilities across Regional NSW
- Establish public transport pricing and regulatory cross-border MoUs between State governments where none exist
- Landside access strategies for all regional airports to ensure a focus on an adequate door-to-door customer experience. Includes funding mechanisms for landside access, staged implementation to integrate with ground transport and facilitation of consultation and planning
- Prioritise access to interchanges and corridors by high efficiency passenger and freight services, carried in shared, connected, automated and electric vehicles
- Develop and conduct trials of connected and automated vehicles (CAVs), electric vehicles (including buses) and Intelligent Transport Systems to support safer and more efficient movement of people and goods
- Amend Transport cluster (or NSW Government) fleet leasing policies to use safer and lower emissions vehicles, to reduce costs and improve health outcomes of staff and communities, and to accelerate uptake in regional communities of safer, cleaner vehicles
- Provide for all Regional NSW customers (including pedestrians and cyclists) and for future adaptability to emerging technologies and service models as part of major transport projects
- Implement road network planning and development strategies that include road safety principles for all users to support the achievement of NSW Government road safety targets and long-term vision
- Develop a policy and regulatory framework to manage the safety introduction and promotion of Assisted Mobility Devices (AMDs) that accounts for advancing technology and automation
- Develop and implement an electric vehicles policy to maximise benefits for passenger and freight mobility, productivity and liveable centres. Develop cost effective energy reduction solutions for passenger and freight services
- Re-focus asset management to adopt a 'whole of life' approach (plan, build and manage assets now and into the future that are safe and available, and provide the desired operational performance in a reliable, sustainable, presentable and affordable manner)

State-wide - Policy / Planning Initiatives

- Implementation of improved multi-modal road network management system to enable live monitoring of network performance across all passenger and freight modes that use our motorways and highways.

State-wide - Service initiatives

- Adopt regional passenger transport strategic planning framework and delivery model focusing on connectivity, flexibility and efficiency, access and equity, legibility and timeliness, and information
- Regional trunk public transport services connecting – incorporating extended/amended TrainLink coach services - connecting Regional Cities and Towns, supported by a network of intra-regional bus services to smaller towns and villages (hub-and-spoke model)
- Convert school bus and community transport services into a model that provides access for all communities
- More convenient public transport arrival and departure times providing day return services to Regional Cities and Centres
- Flexible transport services to provide new or improved coverage to areas where traditional public transport is difficult to provide (e.g. small towns such as Tottenham that are not far from transport corridors but currently have no public transport service except community transport)
- Demand responsive services (some with driverless and electric vehicles) as feeder services (first- and last-mile connections) within Global Gateway and Satellite Cities to lower costs and improve amenity
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities
- Provide faster long distance trips, greater access and span-of hours, and more frequent services
- Improved rail services and facilities to enable increased capacity
- Reduced rail journey times through rail timetable improvements with new Intercity fleet, and implementation of rail network optimisation strategies (i.e. re-orient rail services to provide express services between Regional Cities and Centres and connector services between connector stations/stops and hubs)
- Increase availability of regional slots at Sydney's airports during peak hours
- Increase aviation connections from Regional Cities and Centres to interstate destinations in addition to Sydney – more services commencing to enable connections to different catchments
- Invest in Assisted Mobility Devices (AMDs) and electric bike sharing schemes to incentivise uptake within context of an optimal policy and regulatory framework. May include active transport options as well as other AMDs more suitable for an ageing population (e.g. mobility scooters or small CAVs)
- Utilise aerial technology (e.g. by drone) to deliver emergency transport services / disaster response, last mile freight deliveries
- Update rest areas and other roadside facilities for when electric vehicles and CAVs are widely adopted (e.g. charging points)

State-wide - Infrastructure initiatives

- Expand investment in country passenger transport infrastructure projects where it can support greater access and use
- Improve services and facilities at transport interchanges and car parks in Regional Cities to cater for increased use of flexible services and new technologies (e.g. Connected and Autonomous Vehicles and electric vehicles – charge points etc.)
- Regional flexible transport enabling booking system across all service providers
- Corridor improvements to deliver greater journey time savings and road safety outcomes
- Road Safety Program: Road infrastructure upgrades and new projects that include the latest safety features to maximise trauma reduction, and will include investments in safety barriers, audio tactile line markings, 2+1 roads, and wide centreline
- Resilience Package: Improving immunity for flood prone local roads which provide key connections to Regional Cities or Centres
- East-west corridors linking Regional Cities and Centres to the upgraded north-south road network (e.g. Golden / Great Western / Kings Highways)
- Upgrades of various bridges in Regional NSW, including extension of the Bridges for the Bush Program and local road bridges
- Fixing Country Roads expansion to fund projects that better connect local and regional roads to state highways and key freight hubs
- Address pinch points in the road network for both passengers and freight
- Town bypasses diverting heavy vehicle freight movements and other through traffic away from town centres, combined with improved placemaking features in bypassed centres, to improve traffic, safety, and urban amenity
- Smarter Roads incorporating design standards to support CAVs. The strategic road network will be able to adapt to accommodate the evolution of future CAVs for freight and passenger movement
- Review and implement Intelligent Transport Systems for managing connected vehicles and infrastructure, where it is cost-effective to do so
- Provide for priority walking access and bicycle parking within interchange precincts
- Completion of 2 km radius walking catchment investments for Regional Cities and Centres
- Apply the roll-out of the Movement and Place planning framework to implement the Regional Centre in-town Access Improvement Program
- Regional Airports Program (landside improvements) to increase efficiency, accessibility, competition, commercial viability and sustainability of regional aviation in NSW. Includes supporting connections through the provision of funding to upgrade and maintain regional airport facilities. Based on a 'hub and spoke' model, the focus should be on a number of key regional hubs and a few smaller but strategically important airports
- Continue with Fixing Country Rail projects including sidings, passing loops, the reopening of non-operational sections and network enhancements that allow the use of faster, longer and heavier trains
- Implement outcomes from the regional fleet replacement program / new rail stabling / maintenance facilities – to build on and deliver more reliable services. This includes staging the electrification of sections of the intercity rail network
- Facilitate major road freight movements to be operated by automated trucks with critical safety features, improving freight efficiency and road safety. Explore benefits of platooning technology to enable safe and efficient freight movements
- Last Mile Productivity Program for freight movements including the introduction of innovative / flexible options that reduce freight costs and impacts, e.g. use of technologies such as CAVs, drones and GPS tracking to identify vacant bays/parking for vehicles, and other associated infrastructure to improve efficiency

Initiatives committed (0 – 10 years)

Regional Highlights

- Pacific Highway upgrade (Woolgoolga to Ballina)
- Improvements to Newell Highway, Golden, Oxley Highways
- Heavy Vehicle pavement upgrades to Hume Motorway and New England Highway
- Planning for various town bypasses (Parkes, Coffs Harbour, Scone, Muswellbrook, Singleton)
- Ongoing roll out of state wide programs
- New Intercity Fleet (NIF)
- Replacement of regional rail fleet and establishment of regional maintenance facilities
- NSW Boating Now program
- Eden Cruise Terminal
- Maritime Safety Program
- Sealing of remote regional roads (Cobb and Silver City Highways)

Global Gateway and Satellite Cities

- M1 Motorway improvements around Central Coast
- Princes Highway upgrade to 4 lanes and town bypasses
- Newcastle Light Rail
- Newcastle Cruise terminal
- Port of Newcastle road improvements
- Newcastle urban road pinch point projects
- Barton Highway improvements

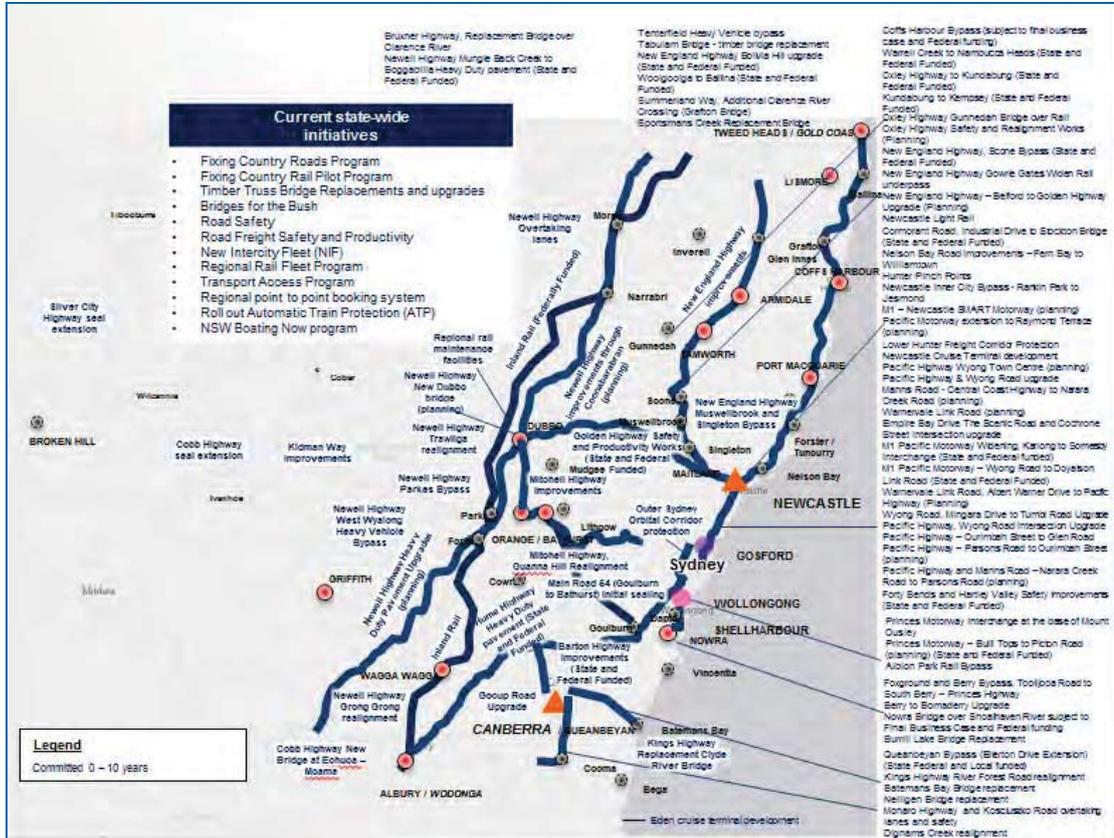


Figure 13: Initiatives committed (0-10 years)

Initiatives for investigation for potential commitment (0 – 10 years) - Subject to Business Case Development

Regional Highlights

- Construction of Inland Rail (Federally funded)
- Investments to deliver key road corridor improvements (e.g. New England, Golden, Hume, Newell, Princes, Sturt Highways)
- Improve east-west road connections between the inland and coast (e.g. Bruxner, Gwydir, Oxley, Great Western, Kings, Snowy Mountains Highway, Waterfall Way)
- Barrier Highway improvements
- Town bypasses across the road network
- Upgrades to Main West Line to Parkes to support freight (Inland Rail) and passenger growth
- Extension of interstate Light Rail systems to support population growth from Gold Coast Airport to Tweed Heads
- Programs to ensure CAV/AV readiness

Global Gateway and Satellite Cities Highlights

- Rail improvements between Sydney and Newcastle, Canberra, Central Coast and Wollongong (new fleet and track re-alignment)
- M1 Motorway improvements between Hawkesbury River and Mount White
- Smart Motorways program for the M1 Pacific, M1 Princes and M31 Hume Motorways
- Public transport investment in Newcastle, Central Coast and Wollongong
- Upgrades of key road corridors into the Illawarra including Picton Road, Appin Road
- Extensions to Newcastle Light Rail
- Extension of interstate Light Rail systems to support population growth from Canberra to Queanbeyan

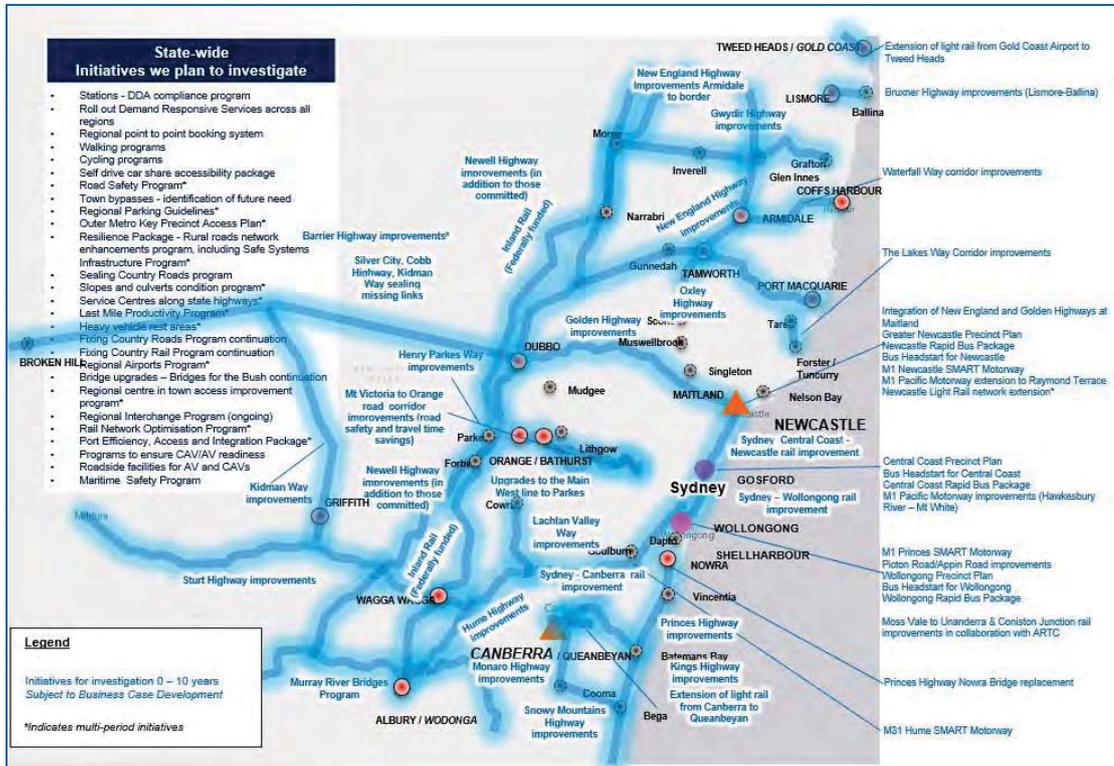


Figure 14: Initiatives for investigation for potential commitment (0 – 10 years)

Initiatives for investigation for potential commitment (10 – 20 years) - Subject to Business Case Development

Regional Highlights

- Corridor protection for Higher Speed Connections along the east coast
- Investment in Lower Hunter Freight Line
- Electrification of the intercity network to:
 - Bomaderry/Nowra
 - Goulburn
 - Bathurst
- Upgrades along major inland east-west road corridors (e.g. Oxley, Gwydir, Kamilaroi Highways)
- Bridge upgrades to allow double stacking on Inland Rail
- Maritime infrastructure development (e.g. Coffs Harbour/Yamba)
- Upgrades of key road corridors to Newcastle Airport and Port Stephens
- More efficient Illawarra escarpment crossing for freight
- Investment in Maldon to Dombarton Freight rail line
- Main South Line amplification / duplication from Junee to Albury
- Main Northern Line improvements to address pinch points and improve passenger timetables

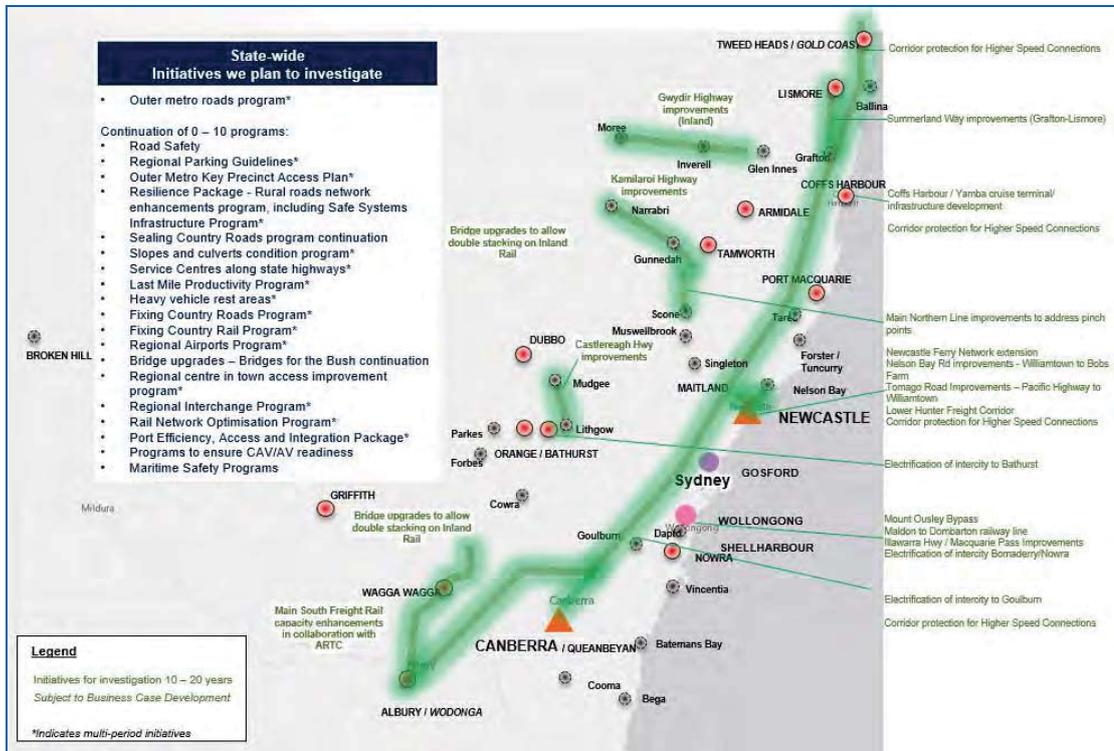


Figure 15: Initiatives for investigation for potential commitment (10 – 20 years)

Visionary initiatives for investigation for potential commitment (20+ years) - Subject to Business Case Development

Regional Highlights

- Investment in a Higher Speed connection along East Coast
- Electrification of the intercity network to Telarah
- Outer Sydney Orbital Stage 2 to Illawarra from Western City
- Illawarra Highway / Macquarie Pass improvements for better connections to South Coast and Port Kembla
- Barton Highway duplication to improve connections to Canberra

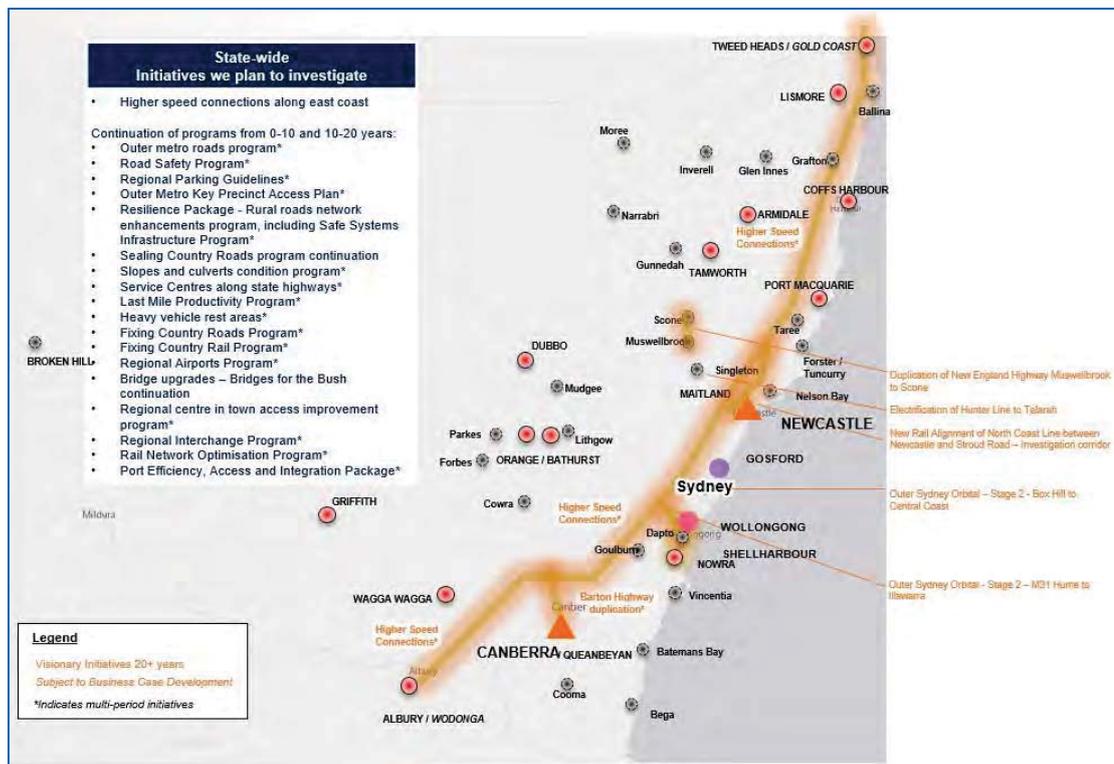


Figure 16: Visionary initiatives for investigation for potential commitment (20+ years)

Initiatives for Regional Cities

Whole of network approach

Planning for a safe, efficient and reliable transport network requires an integrated whole-of-government approach, working in partnership with local communities and stakeholders to deliver integrated transport networks and places that best meet the needs of customers - considerations should include:

1. Centre access on local roads – public transport, walking and cycling and vulnerable members of the community
2. Local road network integrated with land use - enhanced safety, connectivity, management and customer outcomes
3. Improved “within city” public transport services and facilities
4. Key land uses (health, education, retail) and improving travel choices including flexible and community transport
5. Rail, road based public transport and air travel times, frequencies, connectivity and freight productivity improvements
6. Railway station, bus/coach and airport management, transport access and interchange
7. Intermodal planning and ‘last mile’ freight and passenger efficiency
8. Asset renewal and maintenance across all transport assets
9. Highway and network function integrated with land use – enhanced safety, performance and improved customer and freight productivity outcomes

Planning for future bypass and connectivity to key transport hubs and land uses – corridor preservation.

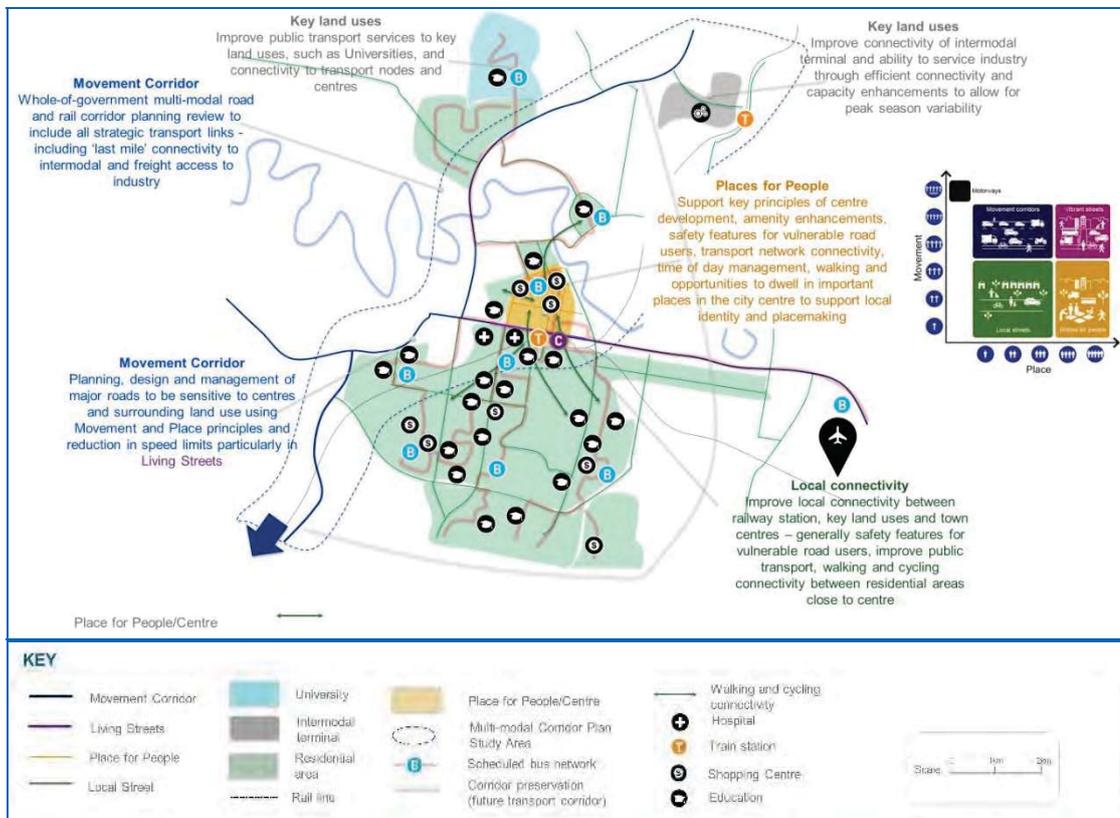


Figure 17: Movement and Place Framework for Regional Cities (Illustrative only)

Initiatives we plan to investigate

State-wide initiatives for investigation

State-wide – Road network initiatives

- Resilience Package*
- Road Safety Program*
- Rural roads network enhancements program*
- Rural roads sealing program*
- Town bypasses – identification of future need*
- Service Centres along state highways*
- Bridge upgrades*
- Slopes and culverts condition program*
- Programs to ensure CAV/AV readiness
- Outer metro roads program*

* Indicates multi-period potential initiatives

State-wide – Public transport and active transport initiatives

- Roll out Demand Responsive Transport across all regions

State-wide – Public transport and active transport initiatives

- Regional point to point booking system
- Stations – Transport Access Program (DDA compliance)
- Regional Interchange Program*
- Rail Network Optimisation Program
- Walking programs
- Cycling programs
- Regional fleet replacement program

* Indicates multi-period potential initiatives

State-wide – Freight initiatives

- Last Mile Productivity Program*
- Heavy vehicle rest areas*
- Fixing Country Roads Program*
- Fixing Country Rail Program*
- Port Efficiency, Access and Integration Package*

* Indicates multi-period potential initiatives

State-wide – In-centre infrastructure initiatives

- Regional Parking Guidelines*
- Regional Centre in town access improvement program*
- Outer Metro Key Precinct Access Plan*
- CAV and active only areas*

* Indicates multi-period potential initiatives

State-wide – Other initiatives

- Self-drive car share accessibility package
- Regional Airports Program*
-

* Indicates multi-period potential initiatives

Hunter initiatives for investigation

Hunter - Policy / Planning initiatives

- Corridor protection for Higher Speed Connections
- Car parking review for Newcastle to evaluate and prioritise car parking availability/use within centres, including car share parking arrangements
- Key Precinct Access Plans for Greater Newcastle
- CAV and active transport only areas for Greater Newcastle
- Develop and support travel demand management policies and tools to support car sharing as well as to assist workers and employers to better manage travel
- Access restrictions in Newcastle Global Gateway City centre to help it become a 'place for people'

Hunter - Service initiatives

- New rail and bus service improvements for Greater Newcastle
- Improvements to public transport service availability and frequencies in Greater Newcastle, including the development of an integrated public transport network hierarchy to enable connected centres
- Rapid Bus Package for Greater Newcastle
- Bus Headstart Program for growth suburbs of Greater Newcastle
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities
- Newcastle Ferry Network extensions
- Newcastle Light Rail (under construction)
- Light rail extension for Newcastle*
- New suburban type rail service for Newcastle
- Improved rail travel times to Sydney and Central Coast through faster rail and higher speed connections

* Indicates multi-period potential initiatives

Hunter - Infrastructure initiatives

- Upgrade cycling network in Newcastle
- Completion of Newcastle 2km pedestrian network
- Faster Rail / Higher Speed connections between Sydney and Newcastle (e.g. track straightening) - reduced journey times, improved customer comfort
- Improve interchange with rail/light rail/bus services
- Electrification of the Hunter Line (Newcastle to Telarah)
- Linking the inland and coastal areas to cross the Great Dividing Range (Golden Highway) to facilitate movement between centres and regions and to cater for growing freight task
- Cooperative Intelligent Transport Systems (CITS) enable greater safety and can optimise the management of pedestrian movement and vehicle traffic

Hunter - Infrastructure initiatives

- Port Efficiency, Access and Integration Package
- Newcastle Cruise Terminal*
- M1 – Newcastle SMART Motorway
- M1 Pacific Motorway extension to Raymond Terrace
- Cormorant Road to Industrial Drive*
- Hunter Pinch Points
- Rankin Park to Jesmond*
- Scone Bypass*
- Muswellbrook/ Singleton Bypass (subject to final business case)*
- Gowrie Gates road under rail bridge*
- Integration of New England and Golden Highways at Maitland*
- Nelson Bay Rd improvements – Williamtown to Bobs Farm; Fern Bay to Williamtown
- Tomago Rd improvements – Pacific Highway to Williamtown
- Lower Hunter freight rail corridor protection
- The Lakes Way corridor improvements
- New rail alignment of North Coast Line between Newcastle and Stroud Road – Investigation corridor
- Main Northern Line improvements to address freight pinch points
- Duplication of New England Highway from Muswellbrook and Scone

* Indicates multi-period potential initiatives

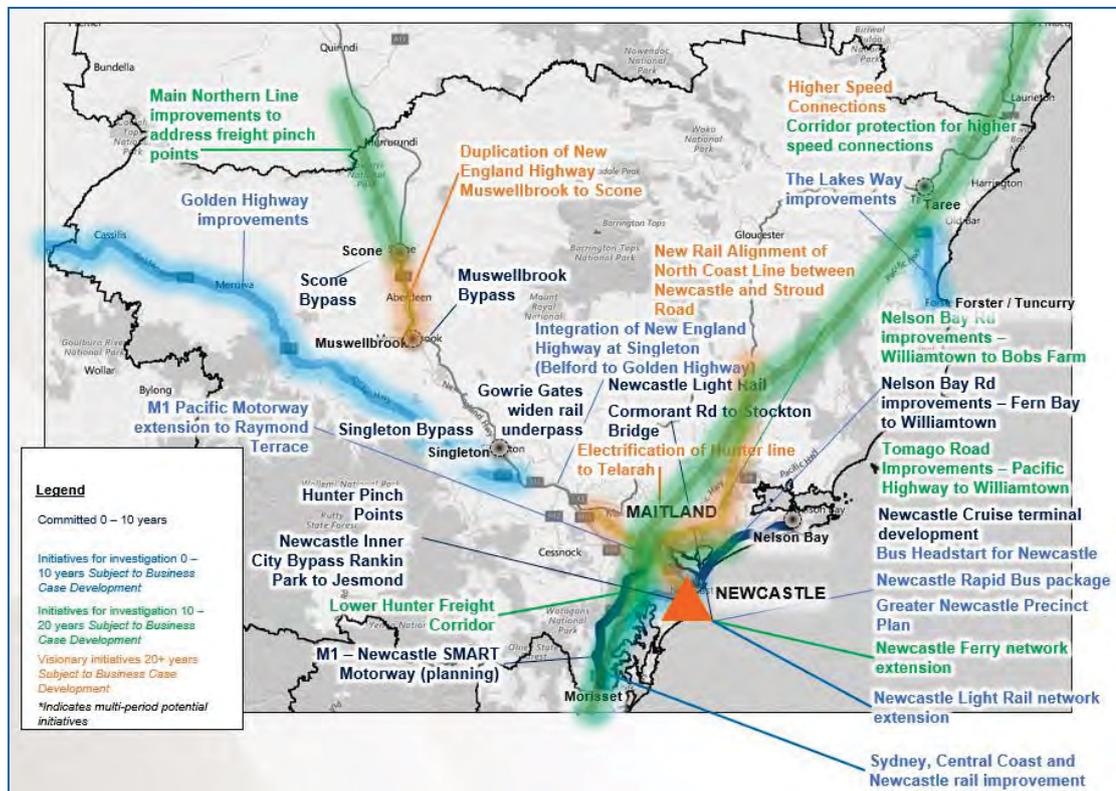


Figure 18: Hunter initiatives for investigation

Central Coast initiatives for investigation

Central Coast - Policy / Planning Initiatives

- Corridor protection for Higher Speed Connections
- Corridor protection for Outer Sydney Orbital
- Car parking review for Gosford to evaluate and prioritise car parking availability/use within centres, including car share parking arrangements
- Key Precinct Access Plans for Central Coast
- CAV and active transport only areas for Central Coast
- Travel demand management policies and tools to support car sharing as well as to assist workers and employers to better manage travel

Central Coast - Service initiatives

- New rail and bus service improvements for Central Coast
- Improvements to public transport service availability and frequencies in Central Coast region, including the development of an integrated public transport network hierarchy to enable connected centres.
- Rapid Bus Package for Central Coast
- Bus Headstart Program for growth suburbs of Central Coast
- Improved rail travel times to Sydney and Newcastle through faster rail and higher speed connections
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

Central Coast - Infrastructure initiatives

- Upgrade cycling network in Gosford
- Completion of Gosford 2 km pedestrian network.
- Faster Rail / Higher Speed connections between Sydney and Global Gateway Cities and interstate capitals
- Track straightening for Intercity services to improve journey times (Sydney to Gosford)
- Intelligent Transport Systems (ITS) enable greater safety and can optimise the management of pedestrian movement and vehicle traffic
- Rail infrastructure upgrades – reduced journey times, improved customer comfort.
- Faster Rail / Higher Speed connections between Sydney and Newcastle
- Upgrade roads between Sydney and Satellite City of Gosford
- Pacific Highway upgrade through Wyong Town Centre*
- Pacific Highway and Wyong Road upgrade at Tuggerah*
- Warnervale Link Road*
- Manns Road – Central Coast Highway to Narara Creek Road*
- Empire Bay Drive*
- M1 Pacific Motorway improvements

Central Coast - Infrastructure initiatives

- M1 Motorway improvements (Hawkesbury River – Mt White)

* Indicates multi-period potential initiatives

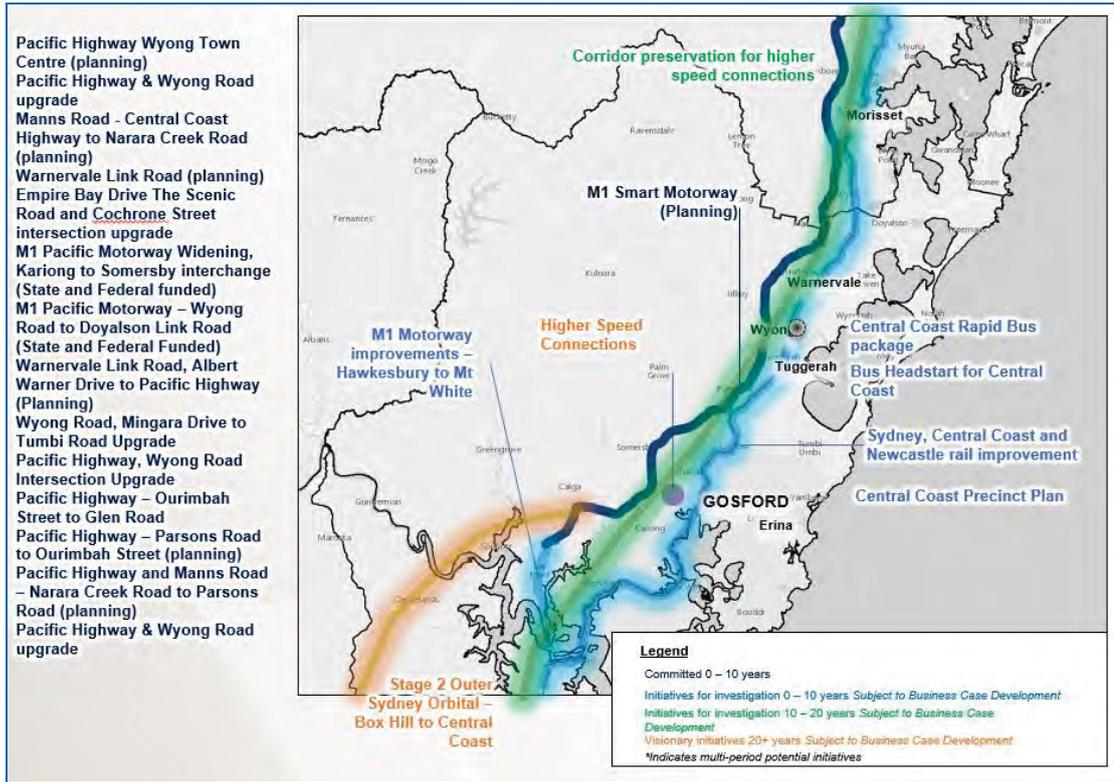


Figure 19: Central Coast initiatives for investigation

Illawarra Shoalhaven initiatives for investigation

Illawarra Shoalhaven - Policy / Planning Initiatives

- Car parking review for Wollongong to evaluate and prioritise car parking availability/use within centres, including car share parking arrangements
- Key Precinct Access Plans for Wollongong
- CAV and active transport only areas for Wollongong
- Travel demand management policies and tools to support car sharing as well as to assist workers and employers to better manage travel.
- Corridor protection Outer Sydney Orbital Stage 2 – M31 Hume to Illawarra

Illawarra Shoalhaven - Service initiatives

- New rail and bus service improvements for Wollongong
- Rapid Bus Package for Illawarra / Shoalhaven
- Bus Headstart Program for growth suburbs of Wollongong
- Improved rail travel times to Sydney through faster rail connections
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

Illawarra Shoalhaven - Infrastructure initiatives

- Upgrade cycling network in Wollongong
- Completion of Wollongong 2 km pedestrian network.
- Mount Ousley Bypass / Illawarra Escarpment Crossing long term solution
- Upgrade roads between Sydney and Satellite City of Wollongong
- Intelligent Transport Systems (ITS) enable greater safety and can optimise the management of pedestrian movement and vehicle traffic
- Electrification of the South Coast Line from Kiama to Bomaderry, duplication of the South Line
- Port Efficiency, Access and Integration Package
- M1 Princes Motorway – Mt Ousley Interchange*
- M1 Princes Motorway – Bulli Tops to Picton*
- Albion Park Rail bypass*
- Princes Highway Improvements
- M1 – Princes SMART Motorway
- Mount Ousley bypass investigation
- Maldon to Dombarton freight rail link
- Princes Highway – Nowra Bridge replacement* (subject to final business case and Federal funding)
- Burrill Lake Bridge replacement*
- Picton Road/Appin Road Improvements
- Illawarra Hwy / Macquarie Pass Improvements

Illawarra Shoalhaven - Infrastructure initiatives

- Main South Freight Capacity Enhancement in collaboration with ARTC
- Moss Vale to Unanderra and Coniston Junction rail improvements in collaboration with ARTC

* Indicates multi-period potential initiatives

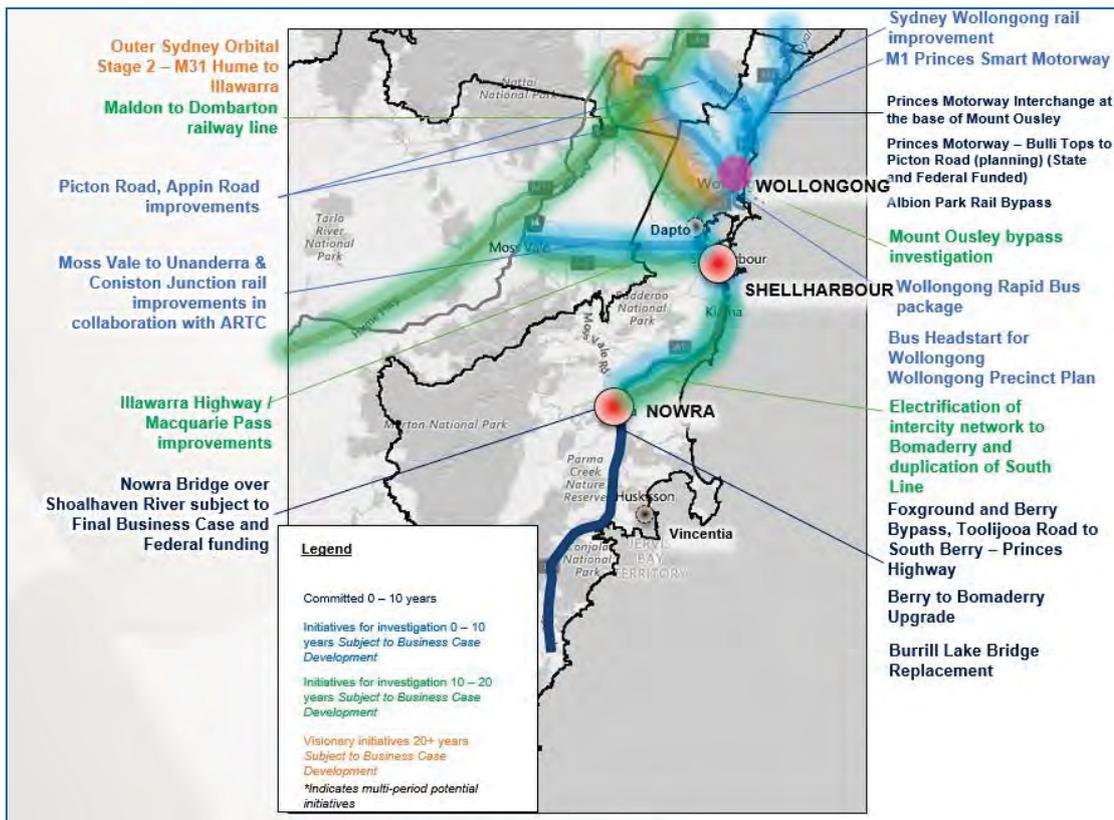


Figure 20: Illawarra Shoalhaven initiatives for investigation

North Coast initiatives for investigation

North Coast - Policy / Planning Initiatives

- Integrate/harmonise fares for cross-border regions
- Harmonise cross-border licensing, registration and regulatory requirements for maritime and roads
- Jointly prioritise infrastructure investment on either side of borders
- Corridor protection for Higher Speed Connections

North Coast - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Extend Light Rail from Gold Coast Airport to Tweed Heads
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

North Coast - Infrastructure initiatives

- Faster Rail / Higher Speed connections between Sydney and Global Gateway Cities and interstate capitals
- Linking the inland and coastal areas to cross the Great Dividing Range (Bruxner, Gwydir, Oxley Highways and Waterfall Way) to facilitate movement between centres and regions
- Intelligent Transport Systems (ITS) enable greater safety and can optimise the management of pedestrian movement and vehicle traffic
- Summerland Way improvements (Grafton-Lismore)
- Pacific Highway - Woolgoolga to Ballina* (State and Federal Funding)
- Sportsman's Creek Bridge*
- Completion of Pacific Highway and post duplication upgrades
- Grafton Bridge*
- Coffs Harbour Bypass (subject to final business case and Federal funding)
- Pacific Highway – Warrell Creek to Nambucca Heads*
- Pacific Highway – Oxley Highway to Kundabung*
- Pacific Highway – Kundabung to Kempsey*
- Waterfall Way Corridor Improvements (Armidale- Coffs Harbour)
- Bruxner Highway improvements (Lismore-Ballina)
- Summerland Way improvements (Grafton-Lismore)
- Coffs Harbour / Yamba cruise terminal/ infrastructure development

* Indicates multi-period potential initiatives

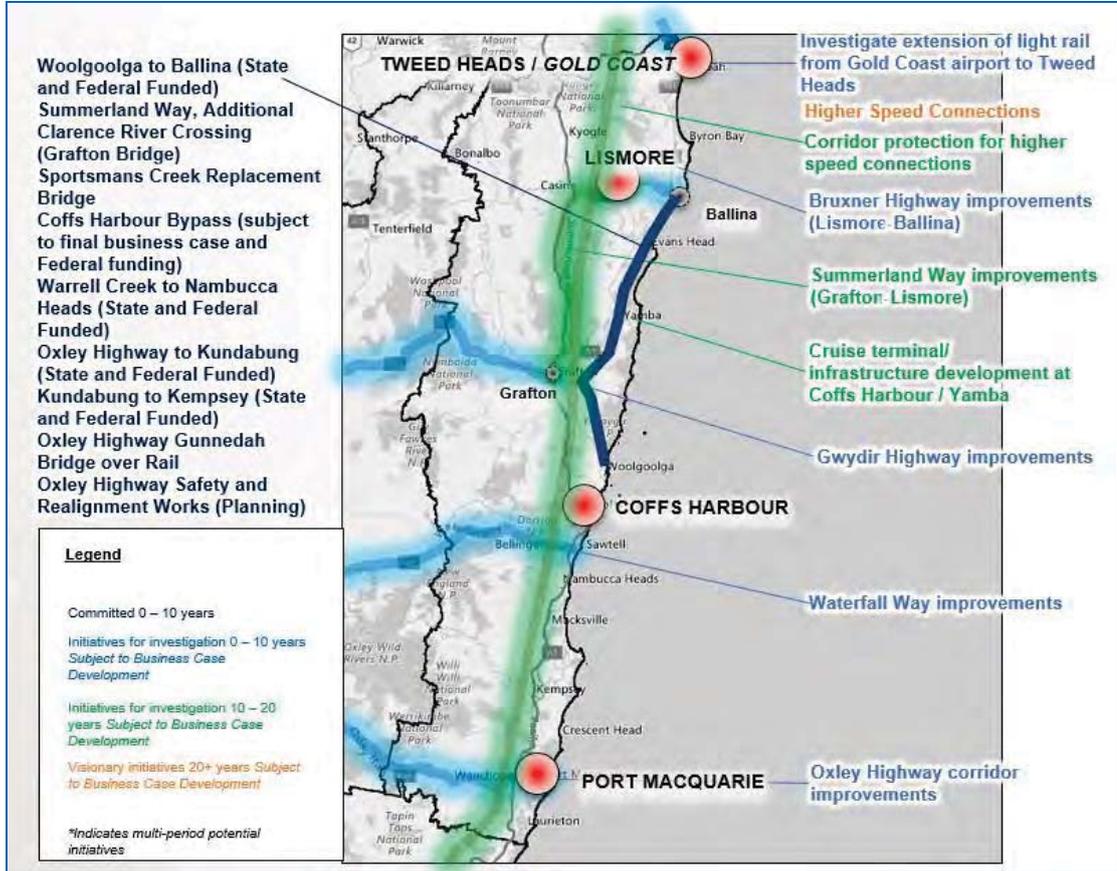


Figure 21: North Coast initiatives for investigation

South East and Tablelands initiatives for investigation

South East and Tablelands - Policy / Planning initiatives

- Corridor protection for Higher Speed Connections
- Harmonise cross-border licensing, registration and regulatory requirements for maritime and roads

South East and Tablelands - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Extend Light Rail from Canberra to Queanbeyan
- Improved rail travel times to Sydney through faster rail and higher speed connections
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

South East and Tablelands - Infrastructure initiatives

- Track straightening for Intercity services to improve journey times (Sydney to Canberra)
- Faster Rail / Higher Speed connections between Sydney and Global Gateway Cities and interstate capitals
- Linking the inland and coastal areas to cross the Great Dividing Range (Kings Highway) to facilitate movement between centres and regions
- Rail infrastructure upgrades – reduced journey times, improved customer comfort.
- Faster Rail / High Speed Rail between Sydney and Canberra-Queanbeyan Global Gateway City
- Gocup Road improvements*
- Ellerton Drive*
- Kings Highway bridge at Nelligen*
- Batemans Bay Bridge*
- Monaro Highway overtaking lanes*
- Princes Highway Dignams Creek realignment*
- Kosciuszko Road improvements*
- M31 – Hume SMART Motorway
- Lachlan Valley Way improvements
- Kings Highway safety improvements*
- Eden cruise terminal development
- Electrification of intercity network to Goulburn
- Barton Highway improvements*
- Barton Highway duplication
- Monaro Highway Improvements
- Kings Highway improvements

South East and Tablelands - Infrastructure initiatives

- Snowy Mountains Highway Improvements

* Indicates multi-period potential initiatives

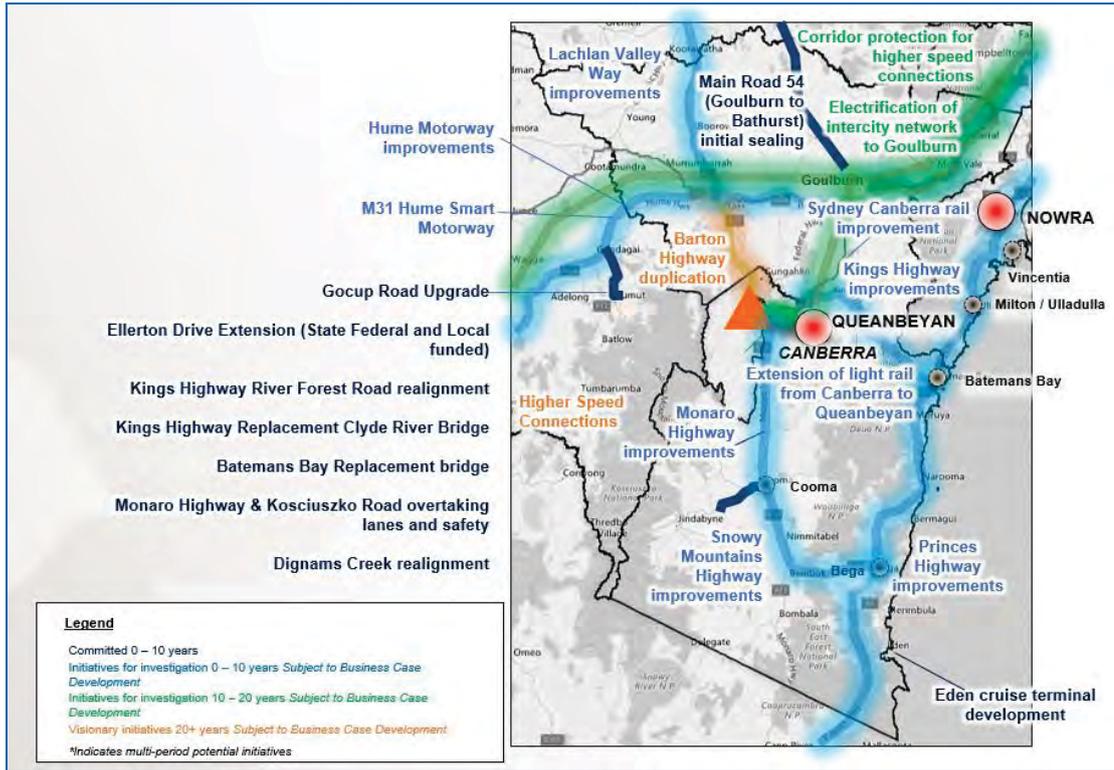


Figure 22: South East and Tablelands initiatives for investigation

Riverina-Murray initiatives for investigation

Riverina-Murray - Policy / Planning initiatives

- Integrate/harmonise fares for cross-border regions
- Harmonise cross-border licensing, registration and regulatory requirements for maritime and roads
- Jointly prioritise infrastructure investment on either side of borders
- Investigate the opportunities for the establishment of intermodal facilities associated with Inland Rail within the Region
- Corridor protection for higher speed connections
- Support additional air services that connect communities to Regional Cities and Centres
- Investigate better connections between Wagga Wagga and Albury; Wagga Wagga and Griffith – this would cover both road and rail and consider demand drivers. It could also be undertaken in conjunction with the proposed precinct plans for Wagga Wagga, Albury and Griffith

Riverina-Murray - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

Riverina-Murray - Infrastructure initiatives

- Murray River Bridges (Swan Hill, Yarrawonga, Mulwala)
- Grong Grong realignment*
- Newell Highway improvements*
- West Wyalong HV Bypass
- Inland Rail (Federally funded)
- M31 – Hume SMART Motorway
- Sturt Highway improvements
- Kidman Way improvements
- Kidman Way sealing*
- Main South Line amplification / duplication from Junee to Albury
- Bridge upgrades to allow double-stacking on Inland Rail

* Indicates multi-period potential initiatives

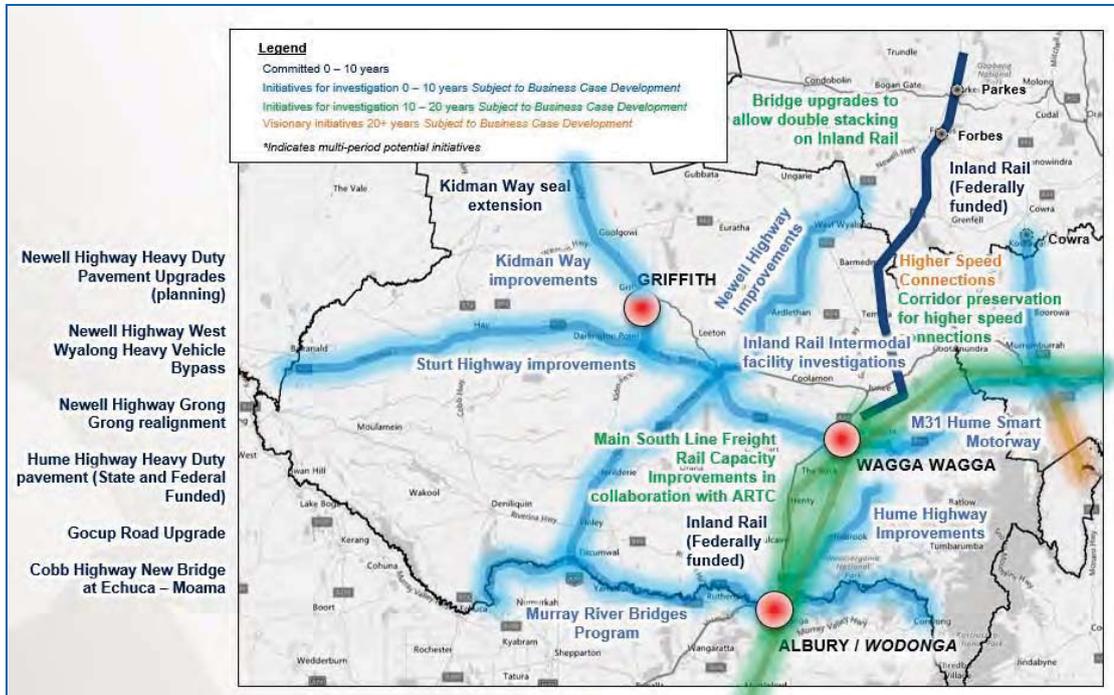


Figure 23: Riverina-Murray initiatives for investigation

New England North West initiatives for investigation

New England North West - Policy / Planning initiatives

- Integrate/harmonise fares for cross-border regions
- Harmonise cross-border licensing, registration and regulatory requirements for roads
- Jointly prioritise infrastructure investment on either side of borders
- Investigate the opportunities for the establishment of intermodal facilities associated with Inland Rail at Narrabri and other potential locations in the Region
- Support additional air services that connect communities to Regional Cities and Centres
- Investigate better connections between Tamworth and Armidale – this would cover both road and rail and consider demand drivers. It could also be undertaken in conjunction with the proposed precinct plans for Tamworth and Armidale

New England North West - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities
- Investigate potential for daily return rail service to Newcastle from Tamworth

New England North West - Infrastructure initiatives

- Tenterfield Heavy Vehicle bypass*
- Tabulam Bridge*
- Mungle Back Creek to Boggabilla HV pavement*
- Bolivia Hill upgrade*
- Oxley Highway*
- Gunnedah Bridge*
- New England highway improvements
- Newell Highway improvements*
- Inland Rail
- Gwydir Highway improvements
- Kamilaroi Highway improvements
- Oxley Highway improvements
- Linking the inland and coastal areas to cross the Great Dividing Range (Bruxner, Gwydir, Oxley, Golden Highways and Waterfall Way) to facilitate movement between centres and regions
- Rail infrastructure upgrades – reduced journey times, improved customer comfort.
- Bridge upgrades to allow double-stacking on Inland Rail

* Indicates multi-period potential initiatives

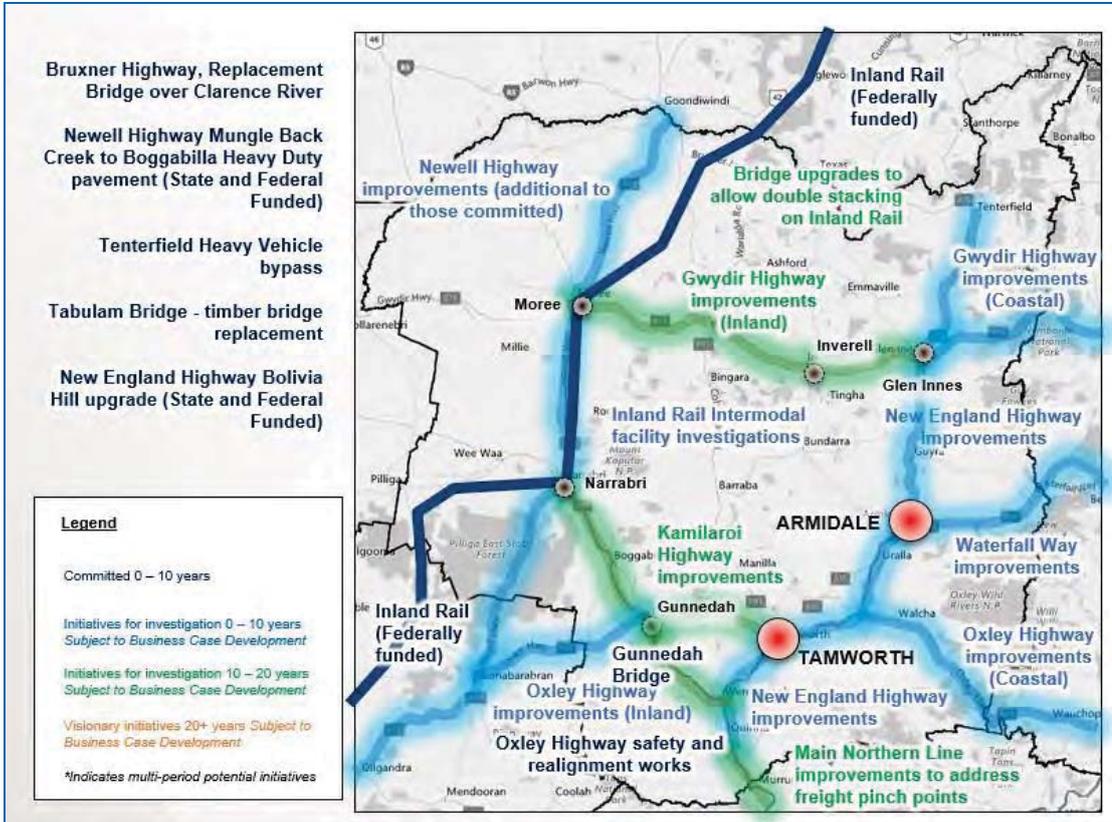


Figure 24: New England North West initiatives for investigation

Central West and Orana initiatives for investigation

Central West and Orana - Policy / Planning initiatives

- Investigate the opportunities for the establishment of intermodal facilities associated with Inland Rail at Parkes and other potential locations in the Region
- Fuel vouchers for remote communities
- Support additional air services that connect communities to Regional Cities and Centres
- Investigate better connections between Dubbo and Orange; Orange and Bathurst – this would cover both road and rail and consider demand drivers. It could also be undertaken in conjunction with the proposed precinct plans for Dubbo, Orange and Bathurst

Central West and Orana - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Identifying opportunities for flexible services connecting isolated communities to their nearest Regional Centre
- Expand intercity rail services to Bathurst
- Investigate to extend Bathurst commuter rail service to Orange
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities

Central West and Orana - Infrastructure initiatives

- Golden Highway improvements*
- Newell Highway improvements*
- Mitchell Highway improvements*
- Mt Victoria to Orange road corridor improvements
- Parkes Bypass*
- Trawilga realignment*
- Henry Parkes Way improvements
- Castlereagh Highway improvements
- Lachlan Valley Way improvements
- Inland Rail
- Upgrades to the Main West line to Parkes to increase freight capacity to support Inland Rail
- Linking the inland and coastal areas to cross the Great Dividing Range (Oxley, Golden Highways) to facilitate movement between centres and regions
- Electrification of intercity network to Bathurst
- Linking the inland and coastal areas to cross the Great Dividing Range (Great Western Highway, passing loops and signalling solutions on Main Western rail line) to facilitate movement between centres and regions and to cater for growing freight task
- Bridge upgrades to allow double-stacking on Inland Rail

* Indicates multi-period potential initiatives

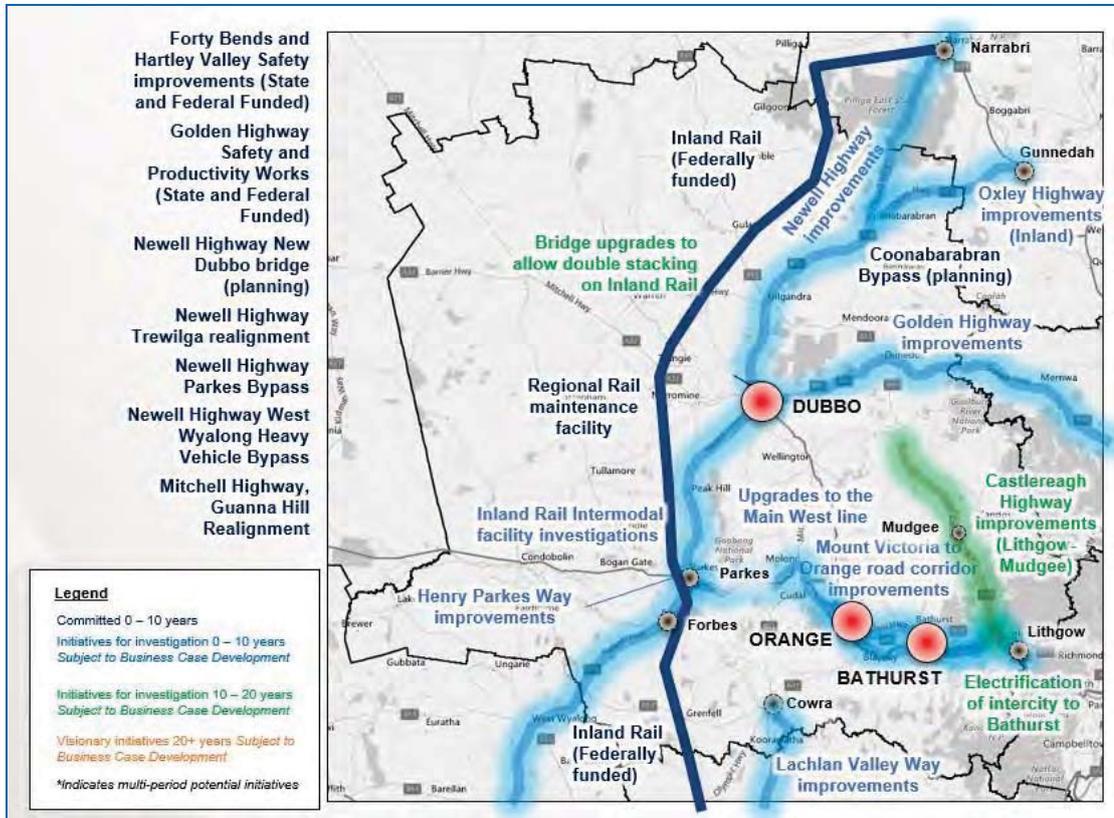


Figure 25: Central West and Orana initiatives for investigation

Far West initiatives for investigation

Far West - Policy / Planning initiatives

- Integrate/harmonise fares for cross-border regions
- Harmonise cross-border licensing, registration and regulatory requirements for roads
- Jointly prioritise infrastructure investment on either side of borders
- Fuel vouchers for remote communities
- Support additional air services that connect communities to Regional Cities and Centres

Far West - Service initiatives

- New bus and coach service improvements for the region to improve connectivity between Regional Cities and Centres
- Within centre bus service improvements for Regional Cities and Centres
- Identifying opportunities for flexible services connecting isolated communities to their nearest Regional Centre
- Investigate potential new servicing patterns and associated enabling infrastructure requirements with a focus on travel between Regional Cities and Centres to accompany new diesel fleet to enable better connections and day return opportunities for regional communities

Far West - Infrastructure initiatives

- Barrier Highway improvements*
- Silver City Highway improvements*
- Cobb Highway improvements*
- Kidman Way improvements*

* Indicates multi-period potential initiatives

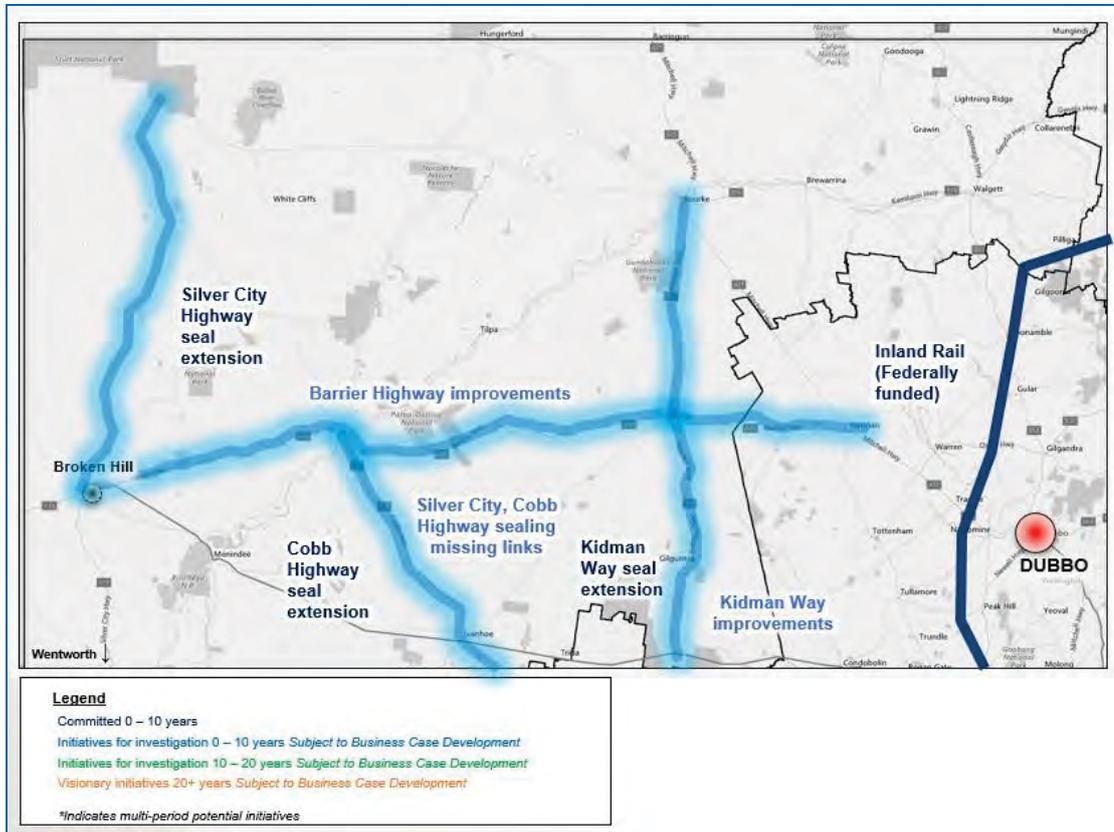


Figure 26: Far West initiatives for investigation

SECTION 3 Land use and transport vision for 2056

An overview of the Regional NSW strategic land use and transport vision for 2056 that underpins our plans for services and infrastructure

The changing roles of Regional Cities and Centres

Importance of Regional Cities and Centres of NSW

- The Department of Planning and Environment has identified around 20 Regional Cities and over 30 Regional Centres in their recently released Regional Plans. Each region of NSW typically supports 1-2 Cities and a similar number of Centres
- Most of these Cities and Centres will play a key role in implementing an integrated hub and spoke transport network in Regional NSW
- As NSW continues to grow, all Regional Cities will play **larger roles** in service provision for their population catchments
- Some Regional Cities experience cross-border issues as they have **stronger links** to Capital and Regional Cities in other states
- Other Regional Cities will evolve to develop greater **global connections** with the Asia/Pacific Region through their nationally significant infrastructure
- The growth of **Greater Sydney** will also directly influence the growth of surrounding Regional Cities
- Regional Centres will continue to play a role in **servicing communities** that are less directly connected to Regional Cities

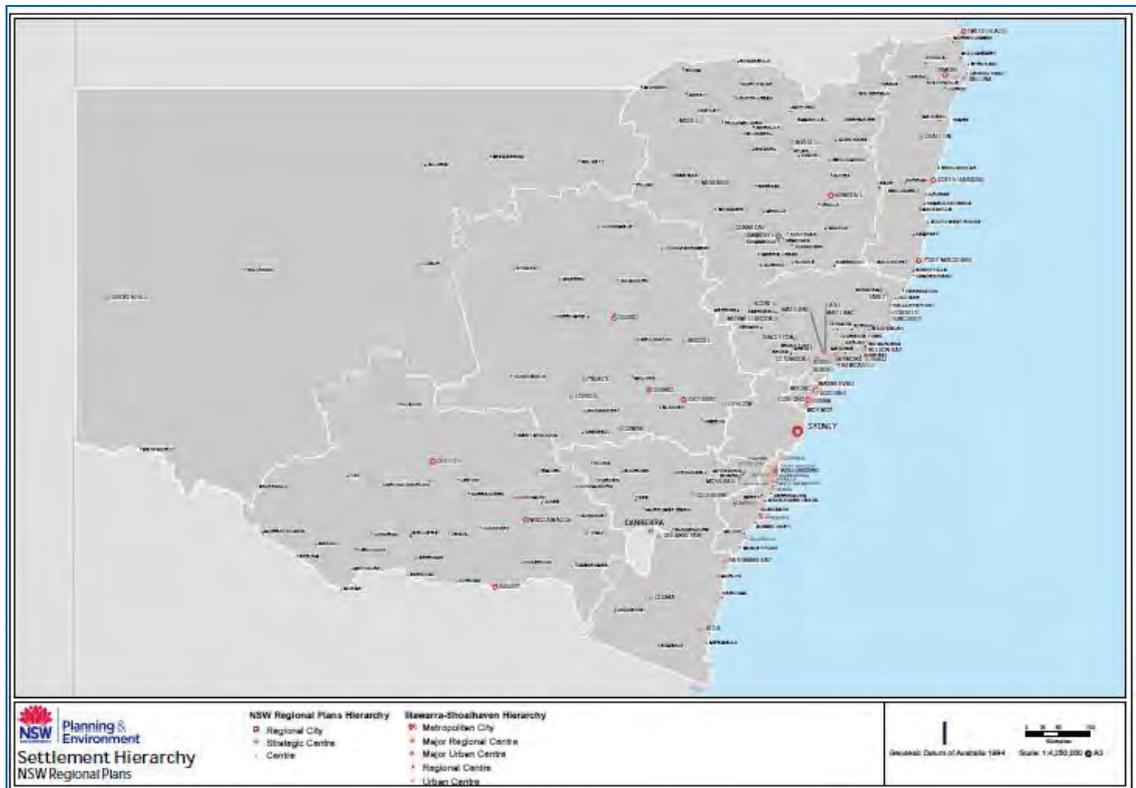


Figure 27: Settlement Hierarchy Regional NSW

Key Cities for Regional NSW

Global Gateway Cities

- Three Global Gateway Cities will provide the state-level services and facilities required to support the growing population in NSW. These Cities are; the State Capital City of Greater Sydney; the Australian Capital City of Canberra; and the growing city of Greater Newcastle
- The Eastern, Central and Western Cities within Greater Sydney will support the population growth of the metropolitan area. The Regional Cities of Gosford and Wollongong will evolve to become **Satellite Cities** as part of the Greater Sydney conurbation by 2056
- **Canberra-Queanbeyan** will serve a broad catchment encompassing significant portions of NSW to the north, south and south-east
- **Greater Newcastle** will serve the Hunter, New England and mid-North Coast catchments
- Areas of the north, south and far west of the state will also be supported by the cross-border Cities of Gold Coast, Melbourne and Adelaide
- Connecting these broader regions to the closest of the three Global Gateway Cities will be of paramount importance to ensure high quality access to major

services and facilities such as Level 1 hospitals, major education institutions, and international travel and trade gateways

- Regional NSW will ultimately comprise of 2 x **Global Gateway Cities** (Canberra/Queanbeyan and Newcastle/Maitland), 2 x **Satellite Cities** (Gosford and Wollongong/Shellharbour) and 13 x **Regional City Transport Hubs**

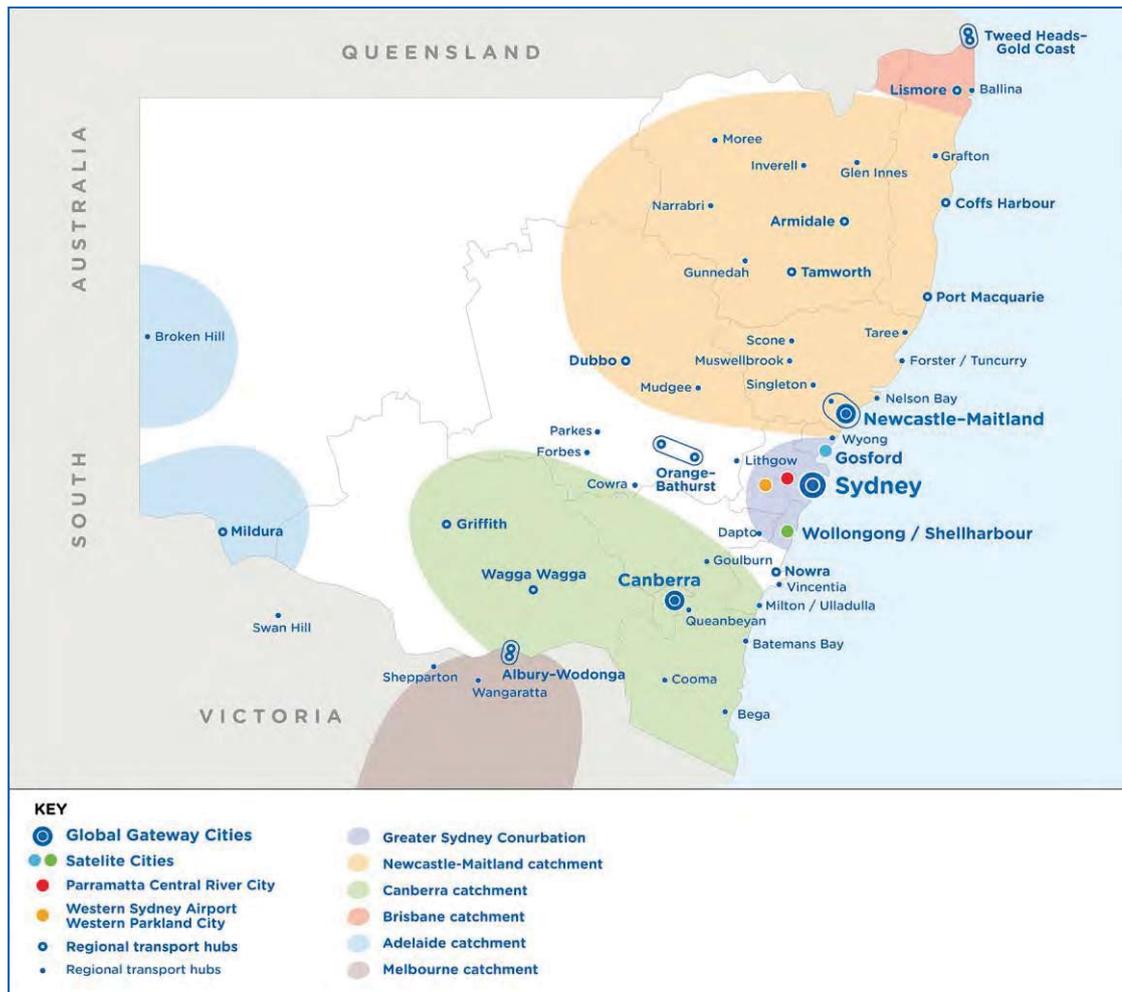


Figure 28: Importance of the Global Gateway Cities

Five Metropolitan Cities of Sydney

- In addition to the **three Cities**, by 2056 the Greater Sydney Metropolitan area will encompass the Satellite Cities of **Gosford** and **Wollongong**. These existing Regional Cities will evolve to strengthen critical linkages to jobs and services within Greater Sydney, due to their proximity and improved road and rail connections
- Gosford** will continue to provide the services and facilities required to support the Central Coast catchment; whilst Wollongong will continue to support the Illawarra, Shellharbour and Shoalhaven catchments
- Nowra** will mark the closest Regional City to Sydney from the south. Nowra will require strong connections to Wollongong

- The **Southern Highlands** will mark a transition point between the Greater Sydney and Canberra catchments. The Southern Highlands will have a more dominant access to Sydney, particularly connecting to Strategic Centres within broader Western City such as Campbelltown/Macarthur
- **Bathurst** will mark the closest Regional City to Sydney from the west. Bathurst will require strong connections to Sydney, particularly to the Western City
- **Wyong/Tuggerah/Morisset** will mark a transition point between the Greater Sydney and Greater Newcastle catchments. Areas within Lake Macquarie will have a more dominant access to Newcastle, with an evolving connection to centres located in the southern urban area at Charlestown and Glendale. Areas to the south of Warnervale on the Central Coast will be part of the Gosford and broader Sydney catchment and will require strong connections to Sydney.

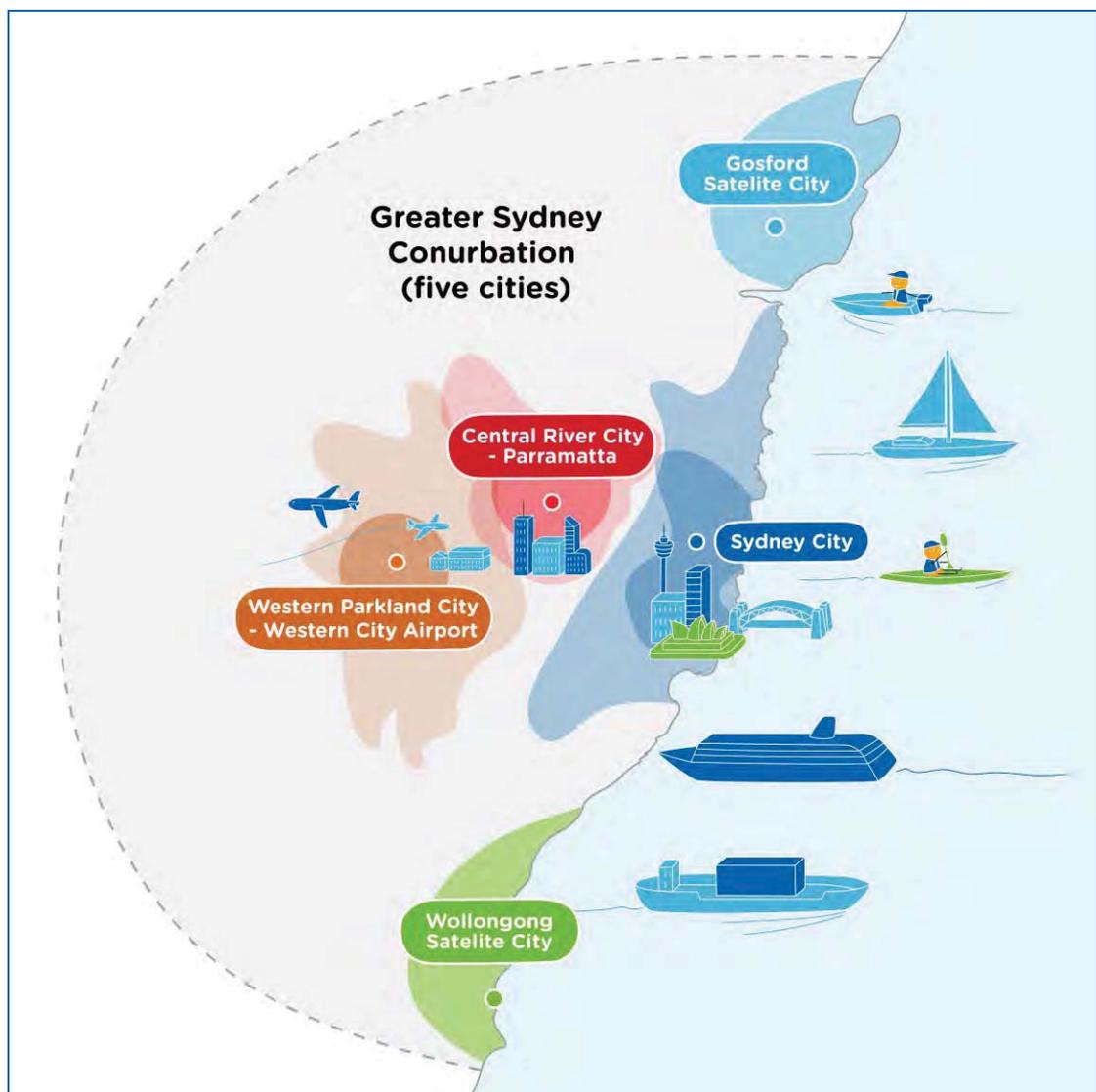


Figure 29: The five metropolitan cities of Greater Sydney by 2056

Key demographic trends

- Regional NSW growth to 2056 will be predominantly along the coast and in close proximity to Sydney
- Greater Newcastle and the areas of the satellite Cities of Gosford and Wollongong regions are forecast to grow by 430,000 people by 2056
- The Central Coast and Greater Newcastle will be NSW's largest Regional Centres in 2056
- The rest of Regional NSW is forecast to grow by around 180,000 people by 2056
- In growing Coastal regions (North and South), Regional Cities and Centres have strong growth
- In Inland regions, Regional Cities and Centres will see growth, while surrounding towns will see flat or declining population

Location	Population		
	2016	2036	2056
Greater Sydney	4.70M	6.30M	7.89M
Satellite Cities (Gosford/Wollongong)	0.63M	0.76M	0.88M
Greater Newcastle	0.73M	0.85M	0.91M
Regional NSW (Remainder)	1.69M	1.84M	1.87M
Total (NSW)	7.75M	9.57M	11.55M

Figure 30: Population projections (Source: Department of Planning and Environment, Transport Performance & Analytics TfNSW)

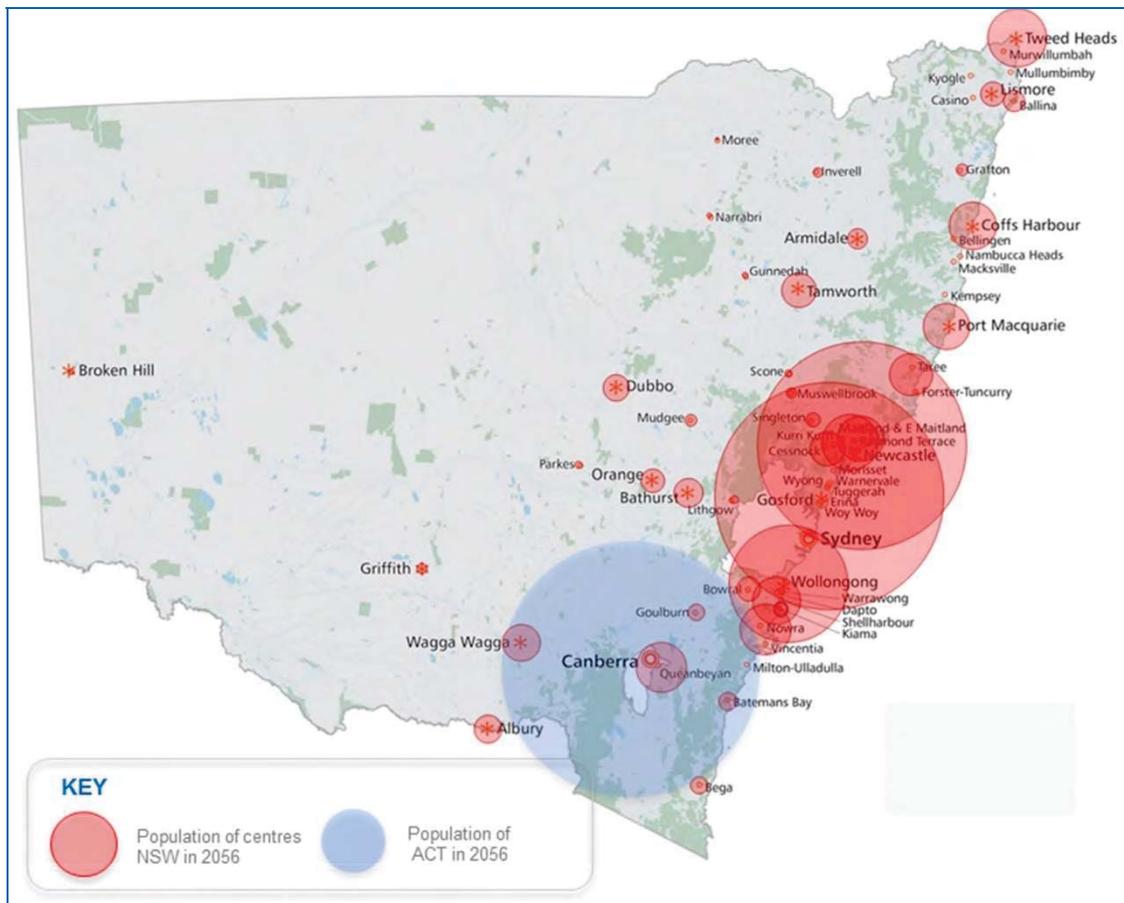


Figure 31: Expected population in 2056

Access and Social Well-being

The vital role of transport

Transport has a vital role to play in ensuring access to jobs, education, health care and other services and in enabling the social well-being of regional communities:

- The aspiration for Regional NSW is to maximise the potential for regional areas, recognising the diversity between regions in their natural assets, strong communities, local skills and expertise and globally competitive industries
- Our customers are dispersed – NSW covers 809,444 km² of land. Sydney only covers about 12,368 km² of the state
- Half the state is considered remote. People who live in areas that are remote will more likely have to travel longer distances to access services and infrastructure. They are also more likely to be socially isolated
- Our customers come from different socio-economic backgrounds. Availability of and safe access to transport has implications for levels of advantage/ disadvantage experienced by our customers

- Transport has a vital role to play in enabling the potential and opportunities for Regional NSW in the future
- Transport has a vital role to play in ensuring access to jobs, education, health care and other services
- Transport has a vital role to play in enabling the social well-being of regional communities.



Figure 32: Mode share to work (Source: Journey to Work 2011)

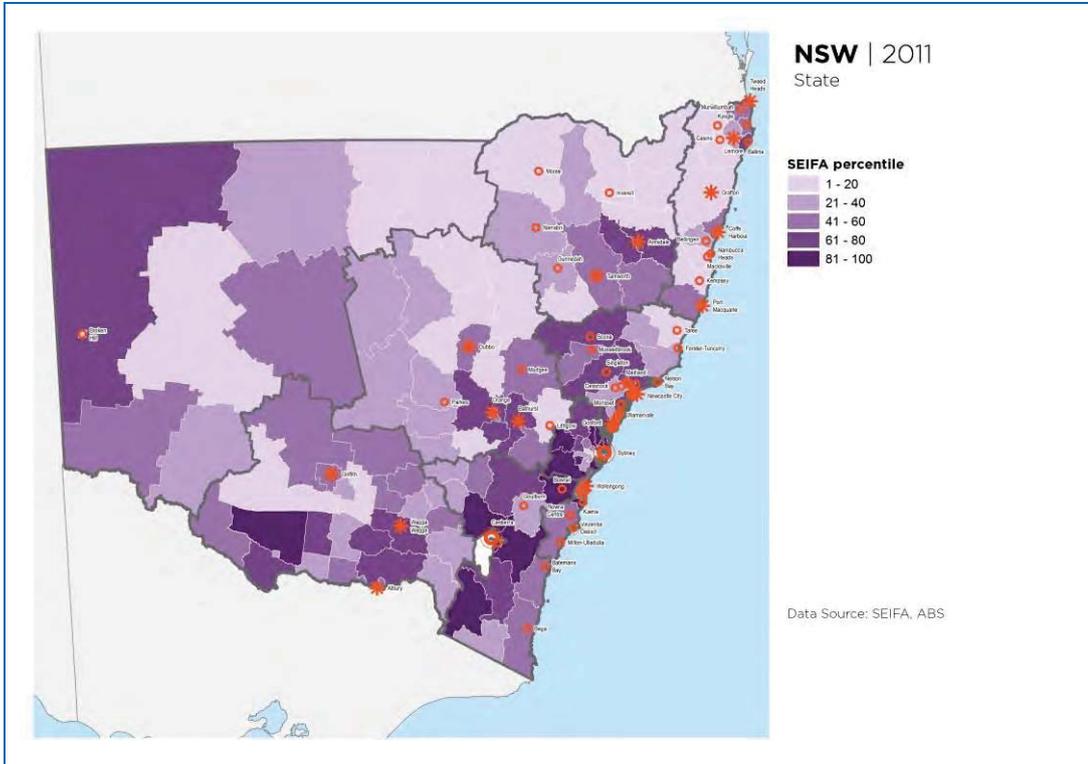


Figure 33: Socio-Economic Indexes for Areas (SEIFA) 2011 (Source: Australian Bureau of Statistics)

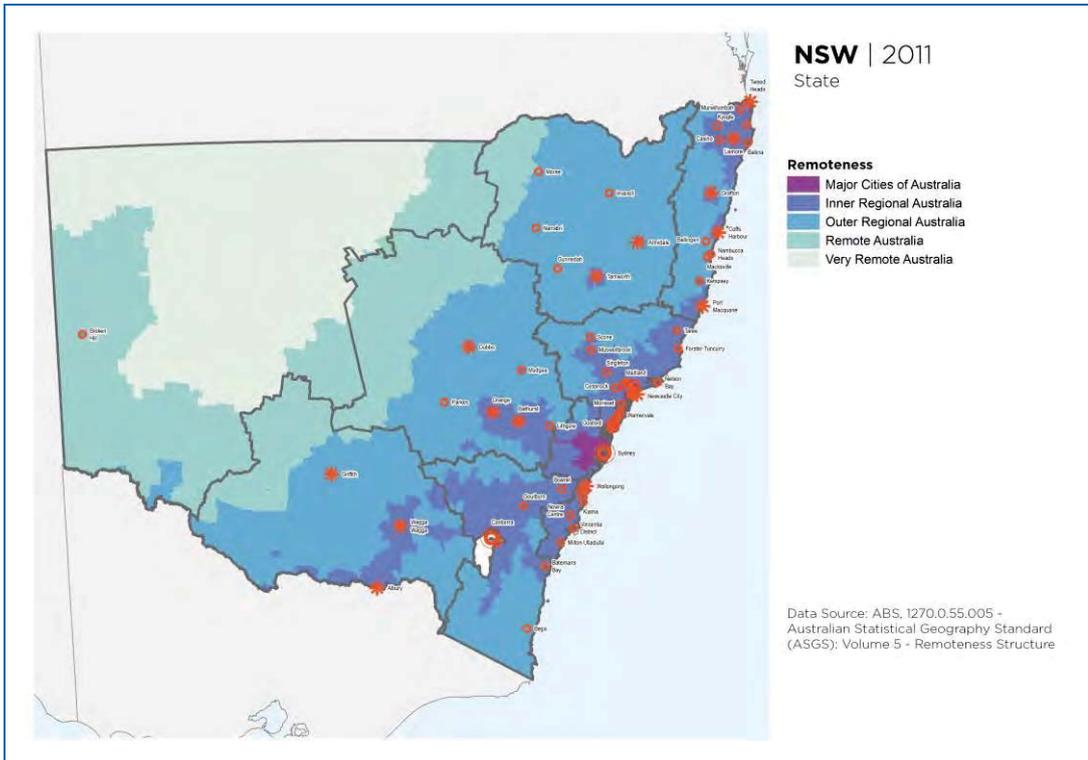


Figure 34: Remoteness (Source: Australian Bureau of Statistics)

Regional economic development

Supporting the economic development of Regional NSW

Transport infrastructure and services will continue to be important facilitators of economic growth in Regional NSW. It is vital that air, road, rail and port access adapts to the changing demands of regional businesses and its population. Future Transport will work with the Department of Premier and Cabinet's new dedicated division, Regional NSW and its Centre for Economic and Regional Development to understand the connectivity needs of the key industry sectors in Regional NSW now and into the future. For example, there is evidence to suggest that the economic activities are becoming increasingly specialised, with regions producing fewer types of goods and services for export outside of their region while employing a larger proportion of the local workforce.

Currently the key industries in Regional NSW are:

- **Agriculture:** Focusing on high-value or niche agriculture export products rather than generic commodities could position NSW as the world's "deli" rather than "food bowl" in line with NSW's volume and quality of produce
- **Manufacturing:** There is a high correlation between food and wood product manufacturing and specialisations in agriculture and forestry. Forming value chains between these sectors will be a key sector for Regional NSW
- **Tourism:** Coastal economies (endowed with beaches and natural amenity) and some inland locations (with heritage, cultural or natural attractions) have comparative advantages in tourism industries
- **Servicing the population:** The ageing population megatrend presents an excellent opportunity for the regions endowed with high amenity value and health infrastructure. Coastal populations also have strong population growth
- **Mining:** In NSW mining is a high value industry, contributing 3.8% to GSP in 2011 while only employing 1.3% of NSW's workforce. As long as economically viable mineral deposits persist this will remain a key sector for Regional NSW
- **Transport, Logistics and Communications:** These are crucial enabling industries for other key sectors such as agriculture, manufacturing, tourism and mining, as well as linking manufacturing and distribution in Capital Cities.

The key principal industry sectors that will drive growth in regional economies are listed below. These regional economies exclude those regions dominated by the economies of the Global Gateway and Satellite Cities as outlined by the Department of Industry.

Regional Economy	Sector I	Sector II	Sector III	Sector IV
North Coast				
Tweed	• Tourism	• Aged care	• Health care	• Fruit and nut growing
Lismore	• Tourism	• Agriculture	• Higher education	
Coffs Harbour	• Health care	• Aged care	• Tourism	
Port Macquarie	• Tourism	• Health care	• Aged care	
New England and North West				
Moree	• Agriculture	• Road freight transport	• Road freight transport	
Armidale	• Higher education	• Agriculture		
Tamworth	• Agriculture	• Food product manufacturing		
Far West				
Broken Hill	• Mining	• Tourism	• Agriculture	
Central West and Orana				
Dubbo	• Agriculture	• Food product manufacturing	• Road freight transport	• Tourism - food & wine
Parkes	• Agriculture	• Mining	• Tourism	
Orange	• Mining	• Health care	• Agriculture	
Bathurst	• Agriculture	• Food product manufacturing	• Wood product manufacturing	
Mudgee	• Mining	• Agriculture	• Wine production	
South East and Tablelands				
Goulburn	• Agriculture	• Dairy product manufacturing	• Dairy cattle farming	
Bega	• Tourism			
Riverina - Murray				
Griffith	• Wine production	• Agriculture	• Food product manufacturing	• Road freight transport
Wagga Wagga	• Higher education	• Agriculture	• Food product manufacturing	
Albury-Wodonga	• Agriculture	• Food product manufacturing	• Road freight transport	

Figure 35: Key principle industry sectors by region (Source: Department of Industry - Centre of Economic Development 2016)

The proposed transport responses in the draft Services and Infrastructure Plan to support specific industry sectors in Regional NSW are outlined below.

Principal Industry Sector	Future Transport response
Aged care	<ul style="list-style-type: none"> • Flexible transport
Agriculture	<ul style="list-style-type: none"> • Last Mile delivery routes • Regional freight rail spurs • Intermodal terminals • Air freight facilities
Dairy product manufacturing	<ul style="list-style-type: none"> • Last Mile delivery routes
Dairy cattle farming	<ul style="list-style-type: none"> • Last Mile delivery routes
Food product manufacturing	<ul style="list-style-type: none"> • Last Mile delivery routes • Air freight facilities and connections • Highway upgrades
Fruit and nut growing	<ul style="list-style-type: none"> • Last Mile delivery routes
Health care	<ul style="list-style-type: none"> • Flexible transport • Public transport for visitors and staff • Regional aviation connections
Higher education	<ul style="list-style-type: none"> • Within centre bus services • Active transport networks • Flexible transport • Travel demand management
Mining	<ul style="list-style-type: none"> • Dedicated freight rail paths • Highway upgrades • Smart Motorways • Grade separated road crossings • Town bypasses • Efficient port access
Road freight transport	<ul style="list-style-type: none"> • Smart Motorways • Highway upgrades • Last Mile delivery routes • Intermodal terminals • Town bypasses • Road side facilities
Tourism	<ul style="list-style-type: none"> • Highway upgrades • Smart Motorways • Cruise terminal facilities • Public transport (regional rail, coaches) • Active transport networks

Principal Industry Sector	Future Transport response
	<ul style="list-style-type: none"> • Flexible transport • Road side facilities • Town bypasses • Regional aviation connections
Tourism - food & wine	<ul style="list-style-type: none"> • Highway upgrades • Public transport (coaches) • Active transport networks • Flexible transport
Wine production	<ul style="list-style-type: none"> • Last Mile delivery routes
Wood product manufacturing	<ul style="list-style-type: none"> • Last Mile delivery routes • Highway upgrades • Air freight facilities and connections • Port access

Figure 36: Proposed transport responses to support specific industry sectors in Regional NSW

The transport service and infrastructure initiatives for investigation to support these regional economies are listed below by region.

Key Sectors	Supporting service and infrastructure initiatives for investigation
North Coast	
<ul style="list-style-type: none"> • Tourism, Aged care, Health care, Higher education; Fruit and nut growing 	<ul style="list-style-type: none"> • Upgrade of the Pacific, Oxley, Bruxner Highways; Within centre bus services; Flexible transport; Coffs Harbour Bypass; new Cruise Terminal; Higher speed connections
New England and North West	
<ul style="list-style-type: none"> • Agriculture; Road freight transport; Higher education; Food product manufacturing 	<ul style="list-style-type: none"> • Upgrade of the Newell, Oxley, Gwydir, Kamilaroi, New England Highways; Within centre bus services; Inland Rail; Bridge upgrades on Inland Rail; Intermodal terminal
Far West	
<ul style="list-style-type: none"> • Mining; Tourism; Agriculture 	<ul style="list-style-type: none"> • Highway Road sealing; Barrier Highway upgrade
Central West and Orana	
<ul style="list-style-type: none"> • Agriculture; Food product manufacturing; Road and rail freight transport; Tourism; Mining; Wood product manufacturing; Higher education; Health care; Wine production 	<ul style="list-style-type: none"> • Upgrade of the Newell, Mitchell, Golden, Castlereagh Highways; Within centre bus services; Inland Rail; Upgrade of Main West Line; new Regional Rail fleet; Lithgow to Parkes
South East and Tablelands	
<ul style="list-style-type: none"> • Agriculture; Tourism; Dairy product manufacturing; Dairy cattle farming 	<ul style="list-style-type: none"> • Upgrade of the Hume, Monaro, Barton, Snowy Mountains, Kings and Princes Highways; Eden Cruise Terminal; rail infrastructure upgrades; Higher speed connections
Riverina - Murray	
<ul style="list-style-type: none"> • Agriculture; Wine production; Food product manufacturing; Higher education; Road freight transport 	<ul style="list-style-type: none"> • Upgrade of the Sturt, Newell and Hume Highways; Kidman Way; Inland Rail; Main South amplification; within centre bus services; active transport; Murray River bridges (Swan Hill, Yarrawonga, Mulwala)

Figure 37: Transport service and infrastructure initiatives for investigation to support regional economies

Improving freight productivity

Planning for future growth in the movement of goods across NSW and within our regional areas

Freight movements in NSW are predicted to increase from 426 today to 628 million tonnes per year (mt pa) in 2056.

The overall freight movements in NSW can be categorised as:

- A third of freight remains within region
- A third involves major north-south movements
- A third involves major east-west movements.

The north-south freight task in 2056 will be 246 mt pa and generally provides direct, efficient and with management will provide for future freight needs.

The east-west freight task will be 208 mt pa and generally limited by physical constraints and network restrictions.

The growing freight task will see more heavy vehicles mixing with other vehicles and transport users on the road, which can increase risk for our customers. Measures that can improve both safety and efficiency of freight movement will produce better outcomes for our customers.

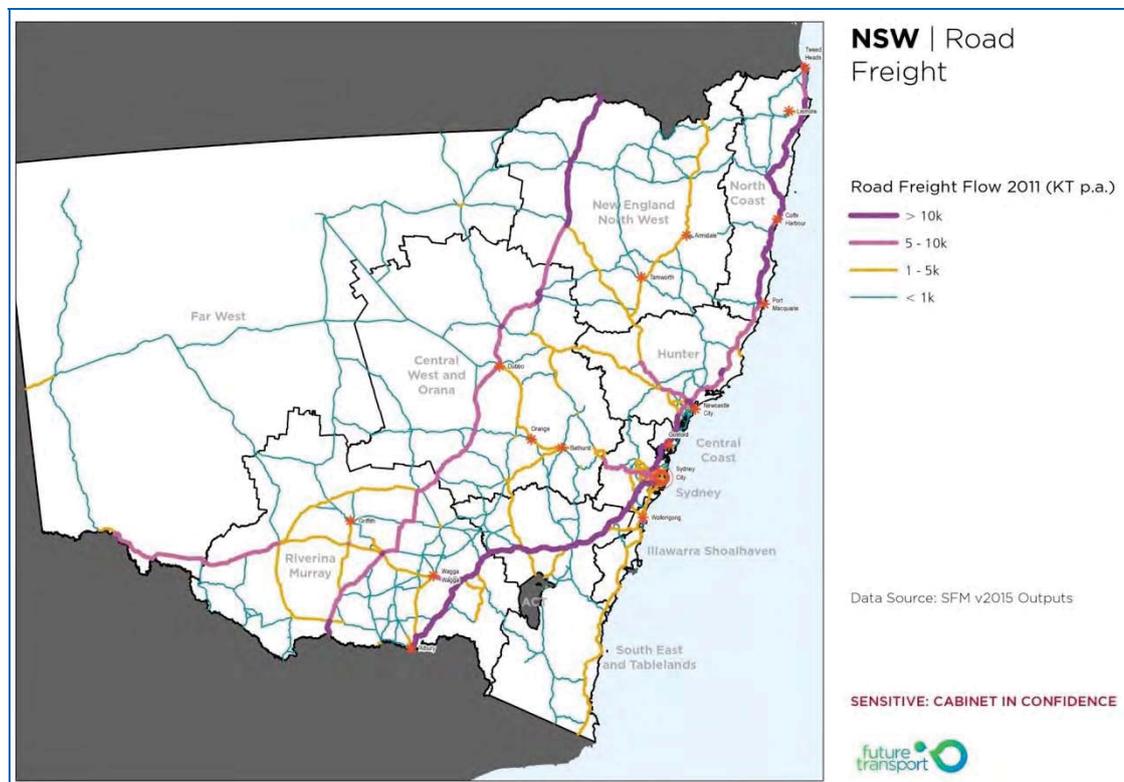


Figure 38: NSW road freight flow 2011 (KT p.a.)

Nationally significant movement corridors

Access to Global Gateway Cities

- Regional NSW has a number of nationally significant transport corridors (road and rail) which pass through the state and connect Capital Cities and major trade gateways including ports and airports
- Significant investment has been made over the past 20 years to improve the north-south highway connections in particular the Hume, Pacific and Newell Highways. These road corridors will continue to play an important role in the movement of passengers and goods and will evolve to become smart roads of the future
- Recent announcements by the Federal Government means that the Inland Rail project will become a reality and provide opportunities to establish intermodal hubs along its alignment through inland NSW and connections from Parkes to the east. The NSW Government is identifying ways in which it can leverage Regional NSW's central location in this one-in-a-generation project
- North-south freight movements facilitated by Inland Rail and the Newell Highway will provide opportunities for improved movements of freight to ports and also provide relief for the coastal road and rail networks which will continue to experience growth in flows dominated by passenger movements
- Access to the trade gateways of Port of Newcastle and Port Kembla from inland NSW will continue to be important for the next 40 years with the movement of coal dominating the rail transport task
- The establishment of a 24 hour International Airport in Western Sydney will also provide new opportunities for agriculture and passenger access from the Central West and Orana and South East and Tablelands

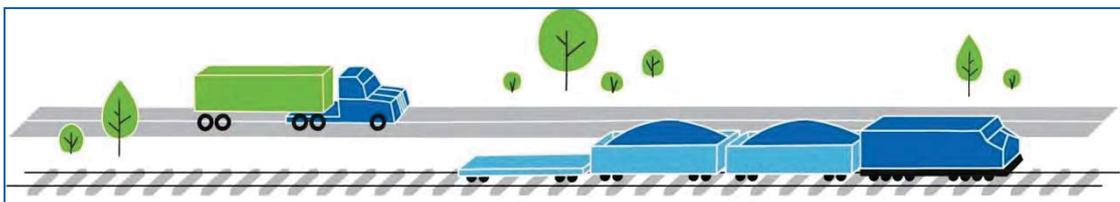


Figure 39: Road and rail freight movement



Figure 40: National road and rail links

State significant movement corridors

Connections to Global Gateway and Regional Cities

- As Greater Sydney grows to a city of 8 million people by 2056, regional passengers and freight operators will look to more efficient ways to move to alternate global gateways, be they in NSW or interstate, to avoid the complex Sydney transport network
- Global Gateways such as Newcastle with its trade port, new cruise terminal and airport will play a bigger role in serving regional catchments beyond the Hunter to the north, north-west and west. Investments in such infrastructure as the Hunter Expressway, Pacific Highway, New England Highway and Golden Highway will facilitate safer and more efficient connections for passenger and freight movement from Tamworth, Armidale, Dubbo, Coffs Harbour and Port Macquarie
- Canberra / Queanbeyan is another global gateway city. Its international air connections and federal government service functions allow it to provide a broader range of services and amenities than adjacent Regional Cities. Canberra will provide global connections to the Regional Cities of Wagga Wagga and Albury / Wodonga

Importance of Regional City to Regional City connections

- Previous regional planning has focussed on the connections of Regional Cities within a region. Whilst these will remain important, safe and efficient links to Regional Cities in adjacent regions is considered just as important as different products and services or service levels may be offered in other Regional Cities
- As previously discussed, the investment in transport infrastructure in the past 20 years has focussed on creating efficient north-south connections between Regional Cities. A future focus on east-west connections between the inland and coastal geographies will support the growth of population on the coast whilst also opening up tourism and trade connections to the inland regions

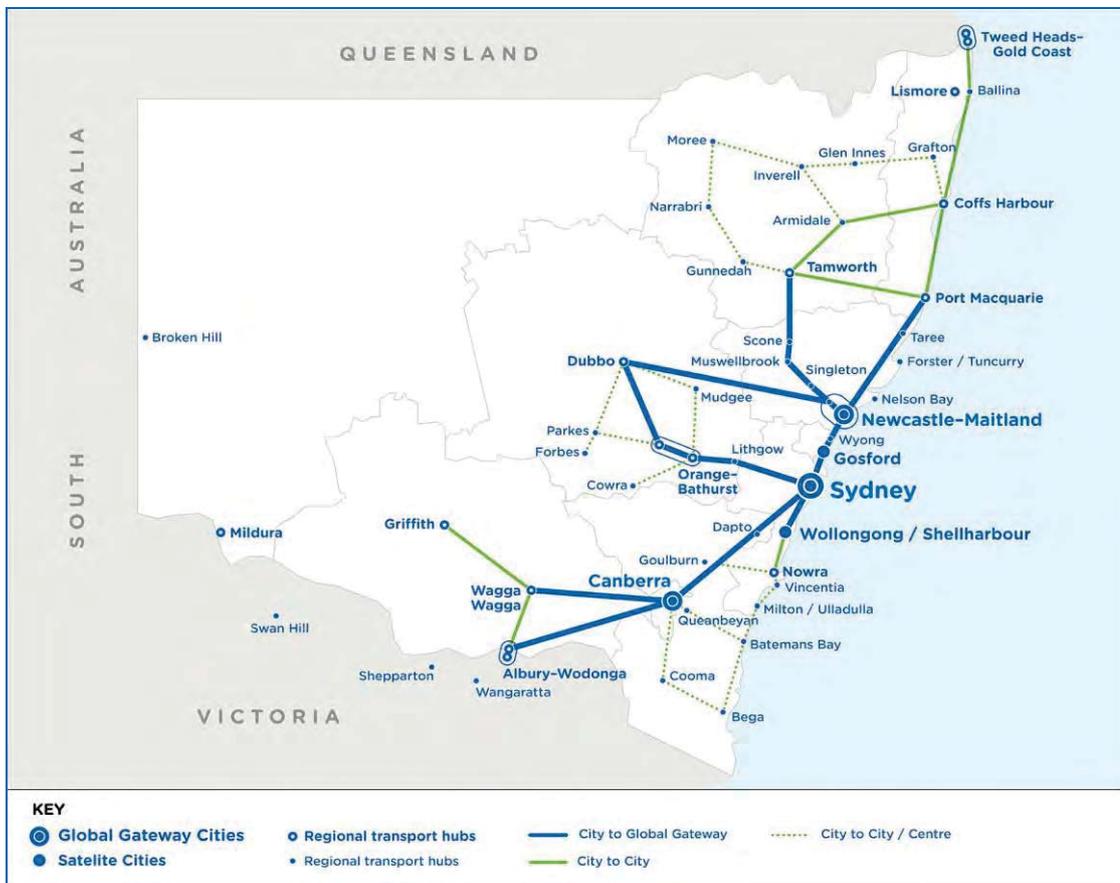


Figure 41: Links between Regional Cities and Regional Centres

Regionally significant movement corridors

Importance of connections to closest Regional City

- Another change in approach to providing transport in Regional NSW is shifting away from a network which is focussed on servicing trips to Sydney to providing more services and facilities in Regional Cities and leveraging changes in technology to reduce the need to travel long distances
- As the Journey to Work data shows (see below) there remains a strong connection between Regional Centres and their associated Regional Cities and towns. These connections will remain important and are likely to benefit from improved transport connections between Regional Cities
- The challenge is to serve these trips as conveniently, safely, efficiently and financially sustainably as possible through new and more flexible transport service models and the leveraging of technological enhancements



Figure 42: Links to Regional Transport Hubs

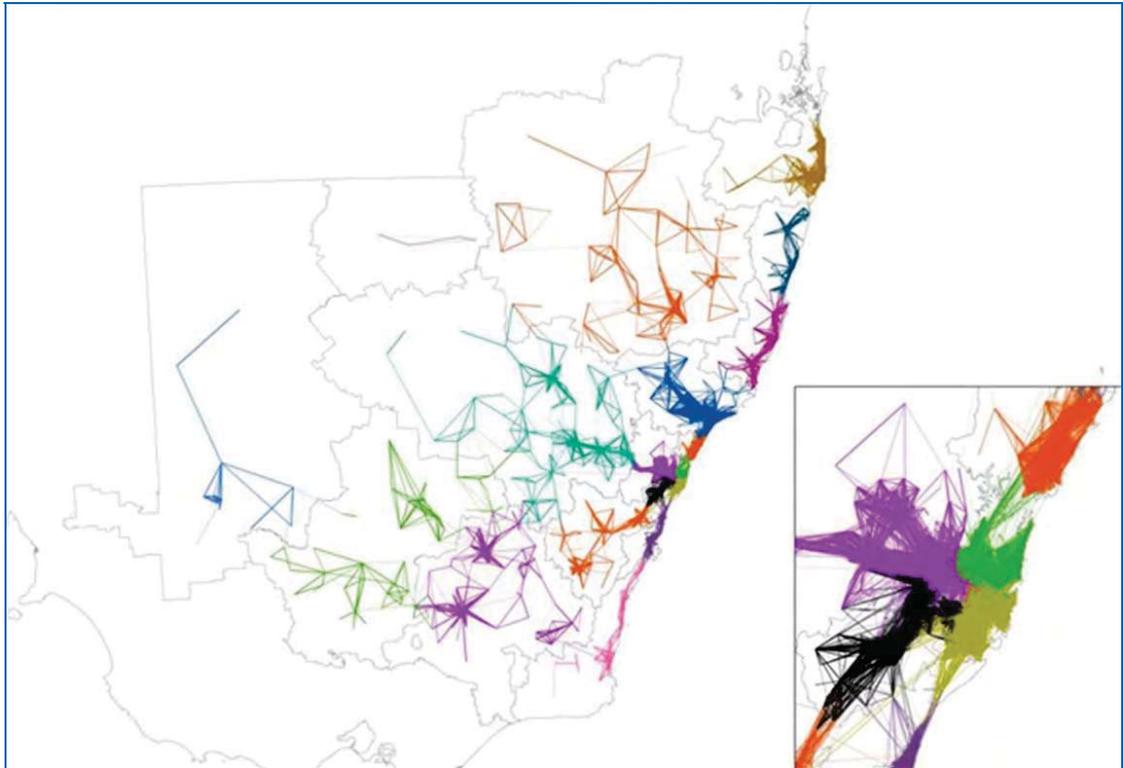


Figure 43: Journey to Work movements (2011)

New approaches for the provision of regional transport

A radial transport network for Regional NSW

With the majority of regional NSW populations living in Regional Cities and Centres in the future, the most effective way of providing better transport to more potential users is through the development of a public transport network model radiating out from Regional Cities rather than just a network focused on Sydney.

This integrated network will be comprised of a range of modes, reflecting the level of demand and distance travelled.

This will capitalise on the role that Regional Cities and Centres play as hubs for other services such as retail, health, education and cultural activities. It will also acknowledge the importance of national and state significant transport links that pass through regions.

By developing the radial network around centres and key corridors, it can respond to the three dominant types of regional journeys:

- within centres
- between centres
- between regions.

This model would:

- utilise the best mode for the transport task
- facilitate improvements to network departure and arrival times
- provide greater timetable integration between services
- bring forward the need to upgrade stops and interchanges
- generate economic activity from transferring passengers in improved environments.

This type of network can be more demand responsive due to the lower network density of trips.

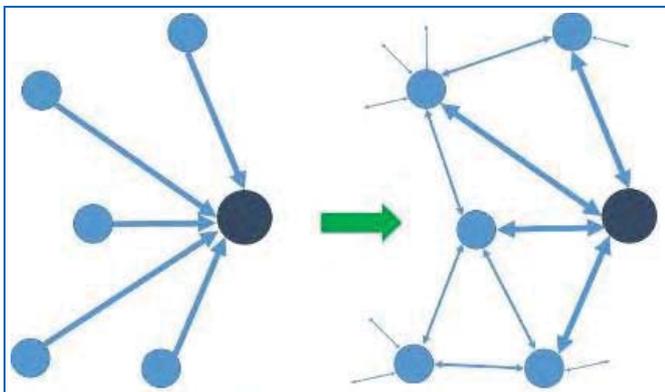


Figure 44: Moving FROM a Sydney-focused network TO a focus on your local Regional City



Figure 45: Regional NSW transport network

Improving east-west connectivity

Opening up inland Regional NSW through improved crossings of the range

As the population of Regional NSW keeps moving towards the coast and primary industry continues to grow in the inland regions, safer and more efficient connections for freight and passenger movements are required.

The role of the visitor economy in Regional NSW is also an important consideration. The recent investments in north-south highway connections (Pacific Motorway, Hume, Princes and Newell) have created significant benefits for the state in terms of safety, travel time savings and productivity. A focus on east-west connectivity is essential to create a truly connected transport network.

On the North Coast, the Bruxner, Gwydir, Waterfall Way and Oxley Highways are the key routes connecting Regional Cities and Centres in the New England and North West region.

Between use of the Hunter Expressway linking with the Golden Highway and New England Highways will support the resource rich regions of the Hunter, Central West and Orana and New England and North West. Upgrading of these connections also supports and reinforces the global gateway status of Greater Newcastle through access to its port and airport. The development of the Golden Highway will provide an alternative route from Central West and Orana around Greater Sydney.

The Blue Mountains will continue to challenge transport access to Greater Sydney from the Central West and Orana due to its expanse and world heritage status. Committed investments by government to the upgrades of the Great Western Highway and Main Western Line will continue to deliver benefits for local communities and the Central West and Orana.

The Illawarra escarpment is one of NSW's most dramatic topographic features which will require significant investment to improve the connections from Wollongong to both the Western City and the South East and Tablelands and maximise access to the Port.

The growth of the global city of Canberra/Queanbeyan will continue to drive demand for movement between the city and the coast via the Kings Highway for both access to services and to support the visitor economy.

The Snowy Mountains Highway will also play a role in maximising the investment for the visitor economy in places such as Eden (new Cruise Terminal) and Cooma (Alpine region).

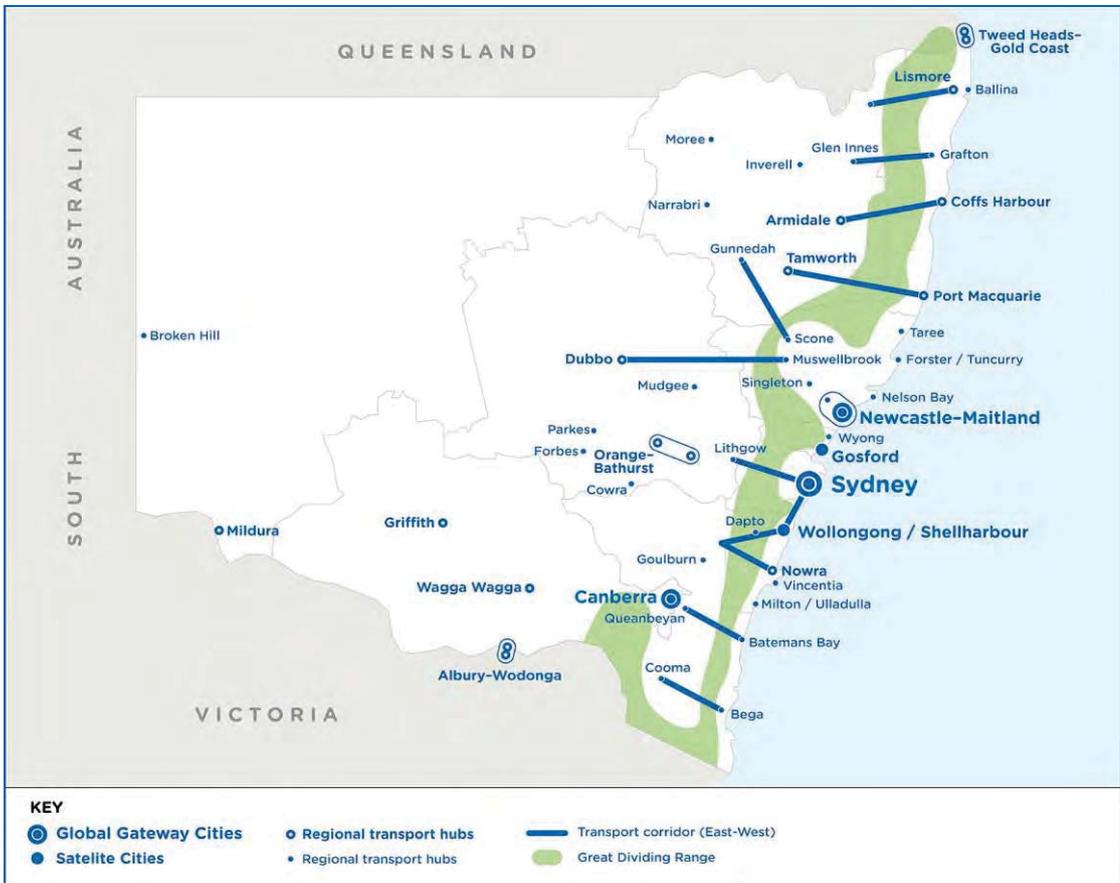


Figure 46: Connecting Cities and Centres across the Great Dividing Range

SECTION 4 Customer outcomes for Regional NSW

An overview of the outcomes that customers can expect when using transport in Regional NSW

Regional NSW customer outcomes

1. A safe transport system for every customer with zero deaths or serious injuries on the network by 2056
2. A transport system which is resilient to significant weather events including floods, fog, bush fires
3. Accessibility to employment and services such as health, education, retail and cultural activities within Regional Cities and Centres
4. A transport system that adapts to and embraces new technology
5. Customers enjoy improved connectivity, integrated services and better use of capacity
6. The appropriate movement and place balance is established enabling people and goods to move efficiently through the network whilst ensuring local access and vibrant places
7. Changes in land use, population and demand, including seasonal changes, are served by the transport system
8. Flexible services are an integral part of the transport system helping to deliver reliability and the most appropriate type of service for customer needs
9. Support the development of the Global Gateway Cities of Newcastle and Canberra
10. Improved efficiency of the network to/from/within the two Satellite Cities of the Greater Sydney by 2056 – Gosford and Wollongong

Customer Outcome 1: A safe transport system for every customer with zero deaths or serious injuries on the network by 2056

A safer transport network

The safety of our customers is the most fundamental requirement of the transport system, where every customer reaches their destination safely. By 2056, NSW will have a network with zero trauma, saving some 350 lives and more than 12,000 serious injuries each year and cutting the cost of trauma to the community by over \$7b a year. This is a particular challenge on regional roads, where the majority of road deaths occur.

We will work towards achieving this customer outcome through a Safe System approach (see right), where we plan services and design infrastructure to integrate with human behaviour to prevent trauma. It involves all elements of the system (infrastructure, vehicles, speeds and user behaviour) working together to ensure safety and in a way that accounts for human error.

A safe, higher performing system will focus on the provision and management of networks, people and fleet across NSW to the highest design and technological standards – with intermodal, collaborative IT systems, all passenger vehicles fitted with automated systems and Intelligent Speed Adaption (ISA), safety by design built into all infrastructure to design trauma out of the transport system. Continuous improvements in risk assessment and emergency response will reduce hazards across the network.

- To ensure safe mobility for all customer and freight travel, safety outcomes will be built into our infrastructure and services upfront. Principles to guide this include:
- Lifting design standard so all new roads are 4 or 5 star, and set targets to achieve customer travel on 4 and 5 star roads
- Prioritising separation of different transport users to improve safety, freight efficiency and promotion of active travel
- Ensuring safety features are better matched to road function and account for the different road users in each environment
- Encouraging modal shift away from private vehicle usage and toward public transport modes
- Investment in safety treatments to address key crash types in Regional NSW
- Encouraging faster uptake of 5-star vehicles, and faster adoption of critical safety technologies such as Auto Emergency Braking (AEB) and lane assist.

Secure systems

Personal safety: Initiatives such as adoption of new technologies, upgraded facilities; more police patrols and improved staff training to address anti-social behaviour and improve customer experience on-board and at transport interchanges.

Managing assets: (including infrastructure and fleet) so they are safe, reliable and sustainable so that customer journeys are safe and secure, integrated and efficient and reliable and comfortable.

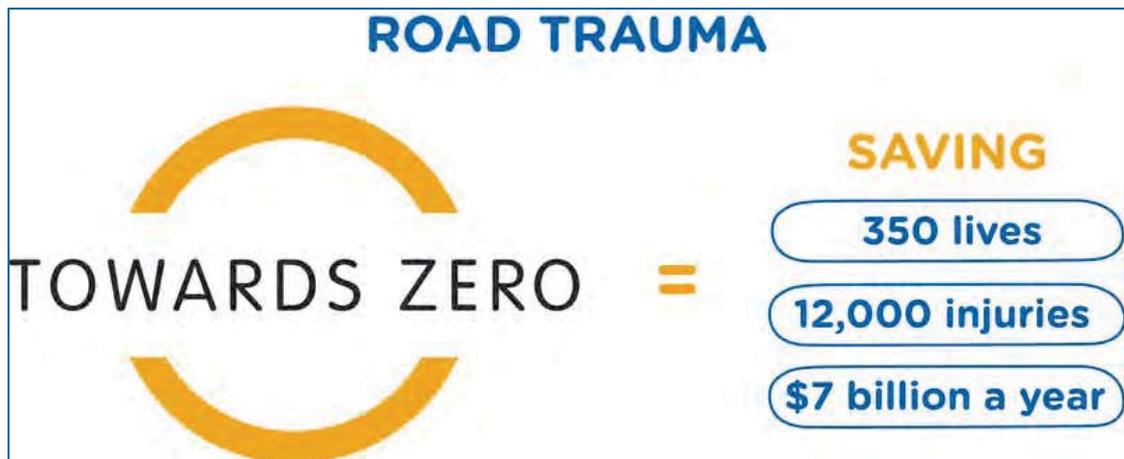


Figure 47: Cost of road trauma in NSW per year

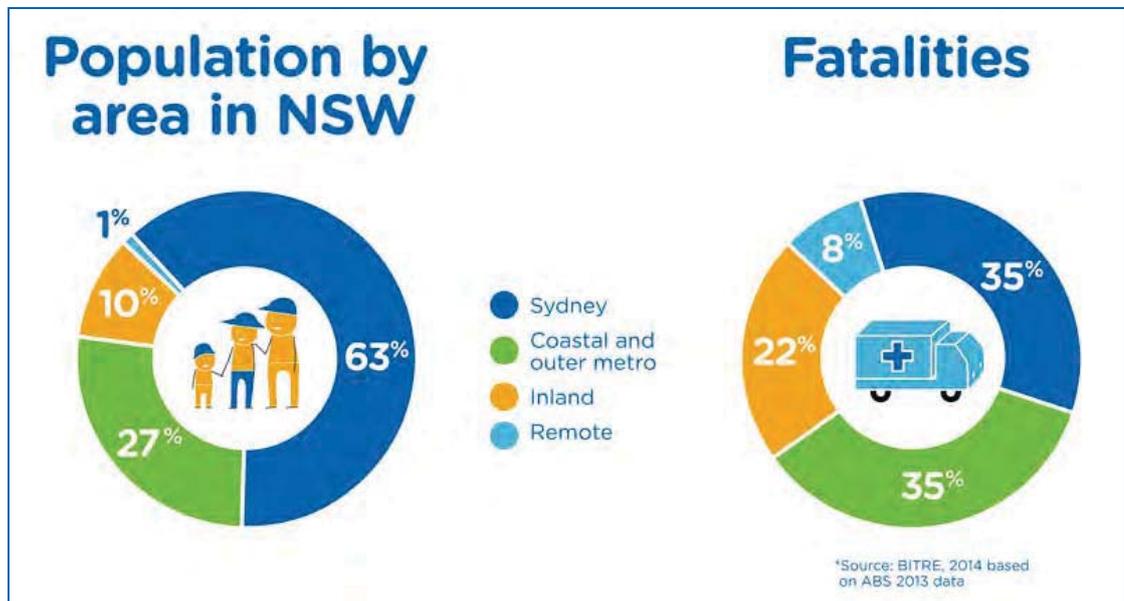


Figure 48: Population and road fatalities by area in NSW (Source: BITRE, 2014 based on ABS 2013 data)



Figure 49: Safe Systems Approach (Source: Centre for Safety)

Customer Outcome 2: A transport system which is resilient to significant weather events

Access to essential services during severe weather events

Weather events affecting the transport network can impact community connectivity and access and lead to long periods of isolation for communities that are cut off.

Significant parts of the Regional NSW road network are subject to flooding and bush fires and can be inaccessible to vehicles, causing drivers to take alternative, likely longer routes.

Examples include:

- Closure of Pacific Highway / M1 due to bushfires
- Closure of rail line due to extreme heat and floods impacting on infrastructure and services and ultimately the customer
- Regional flights grounded due to fog leading to missed slots at Kingsford Smith Airport in Sydney preventing connectivity for communities to onward connections.

The challenge may increase if extreme weather events become more frequent. Asset planning also needs to consider how drainage can be built in to the road network, so that our roads don't inadvertently act as flood levy banks.

Inland and Remote areas in particular the Far West face resilience issues. Given the region's remoteness, and relative transport disadvantage, transport has a critical role in providing access to essential services. In this context:

- Climate resilience will be critical because transport assets and networks have long economic lives and are vulnerable to the direct impacts of climate change
- The long term costs of being prepared by making assets more resilient to extreme weather events is likely to be lower than the cost of recovery
- This means that any investment decision must be taken in light of the current and future climate risks
- Many transport assets and operations need to be made more climate resilient to avoid service disruptions and negative impact on costs and the State's economy
- Future assets need to be designed to new standards taking account of climate change.



Figure 50: Road closure due to bushfire



Figure 51: Road closure due to flooding

Developing a resilient network

A resilient transport system incorporates:

- Improved connectivity and reduced isolation for communities affected by severe weather events such as floods, fog and bush fires
- Making assets more resilient to significant weather events to avoid service disruptions and negative impact on costs and the State's economy
- Making investment decisions and designing assets which are informed by future climate risks.
- We will plan and build a resilient network in order to:
 - Ensure our communities are connected to their Regional Centre (especially for Inland and Remote geographies that are more prone to weather conditions)
 - Make better use of existing assets
 - Withstand significant weather events including floods, fog and bush fires
 - Provide a more resilient road network, particularly in relation to flood levels.



Figure 52: Landslide affecting road infrastructure and traffic movement

Customer Outcome 3: Accessibility to services within Regional Cities and Centres

Increased accessibility to Regional Cities and Centres

- Providing day return Regional Centre connectivity for an expanded geographical catchment
- Same day connectivity to Global Gateway Cities or Capitals for all locations in NSW either:
 - directly, by air or rail services
 - indirectly, by bus/coach + air or rail
- A transport network that enables seamless and affordable inter-regional and cross-border travel
- An equitable transport system that provides connections to all settlements
- Improved information accessibility and legibility for customers
- Transport services that support tourism movement demands and seasons
- An equitable and uniform fare structure.

Outcomes of improved accessibility

- Reduced disadvantage and improved social inclusion for smaller towns and centres
- Increased access for the young to education and employment opportunities enabling social and economic participation
- Physical infrastructure (e.g. buses, trains, bus stops, train stations, etc.) that is accessible to all customers regardless of age or ability
- Improved safety outcomes for customers accessing services and infrastructure.



Figure 53: Improved accessibility for customers

Alignment of fares in Regional NSW with metropolitan Sydney

- There is an opportunity for the alignment of fares in Regional NSW with those in metropolitan Sydney to provide equity between regions and encourage social inclusion and affordability
- There is an opportunity to introduce next generation ticketing system
- Regional fares are similar to Sydney metropolitan for short trips but higher for longer trips
- Fares in Newcastle, Gosford and Wollongong follow the metropolitan fare scale
- Clear price inequity for areas outside current OPAL service area for full fare paying passengers e.g. for a journey of 44km the maximum single adult fare in Regional NSW is \$14.60 compared to \$4.50 in the metropolitan area by bus and \$6.46 by rail
- With the advent of Opal metropolitan fares for non-concession travellers are capped at \$15.40 per day and \$61.60 per week there are discounts for multiple use, transfers between modes and for off-peak travel. These are not available in Regional NSW.

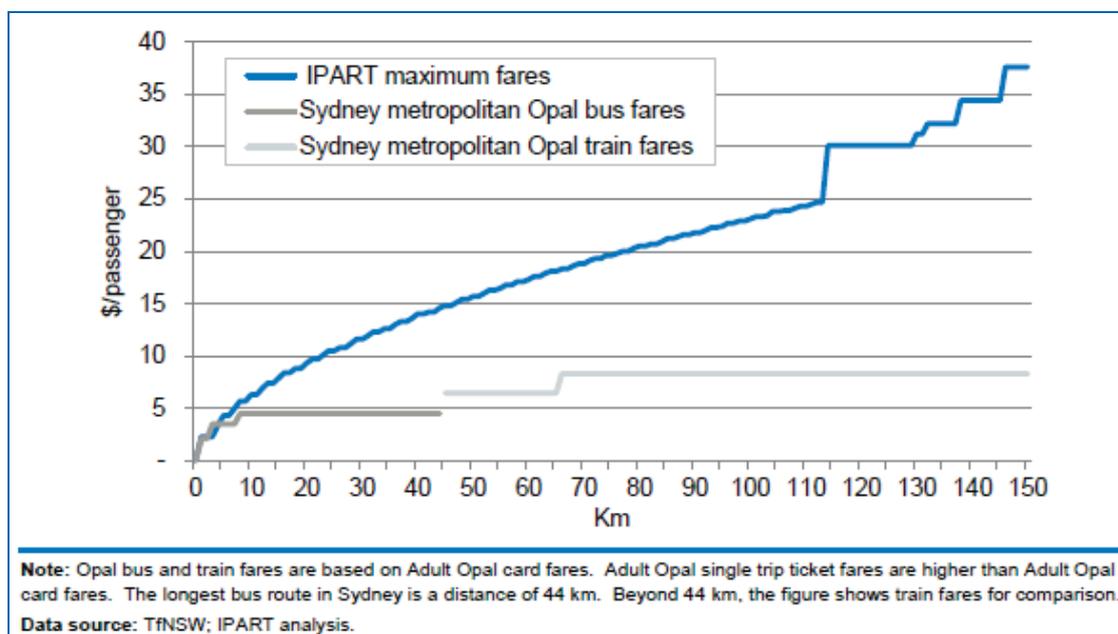


Figure 54: Maximum rural and regional bus fares vs Sydney metropolitan Opal fares (Source: IPART Issues Paper: Review of rural and regional bus fares from January 2018, released March 2017)

Greater connectivity between the regions and their nearest capital

- A transport system that provides greater coverage across NSW
- 7 day connectivity to Capital Cities for all locations in NSW either:
 - directly, by air or rail services

- indirectly, by bus/coach + air or rail
- 'Day return' capital city connectivity for an expanded geographical catchment.

Flexible and personalised service delivery options

- A transport system that through flexible service delivery models:
 - provides personalised services
 - serves multiple destinations (particularly isolated communities)
 - enables customers to access services (e.g. health, shopping, etc.) that are not ordinarily available through regular scheduled services.

Support growth and development in Regional Cities and Centres

- Provide for trips within centres, between centres and between regions
- Change to land use and activity patterns are responded to and influence the transport network.

A transport network that enables seamless and affordable inter-regional and cross-border travel

- Transport services improve opportunities for people and industry to travel easily and affordably interstate
- Travel to your nearest centre or city without penalty
- We will work collaboratively with other State governments to remove barriers and improve connectivity for communities and industries of NSW.

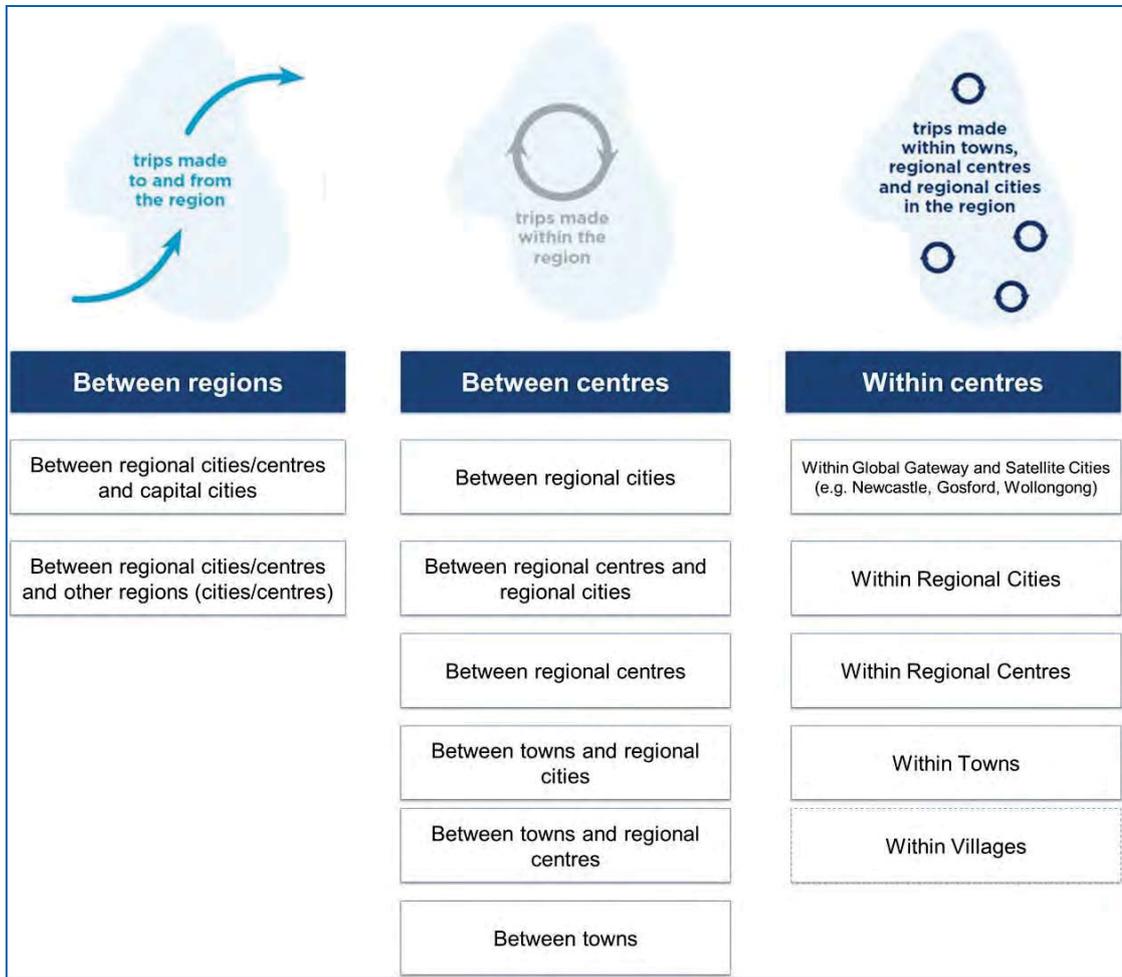


Figure 55: Types of journeys in Regional NSW

Customer Outcome 4: A transport system that adapts to and embraces new technology

Adopting new technology

- Enables dynamic, personalised, customer-centric services
- Provides real time service information
- The customer interface will increasingly be the Mobility as a Service provider not the operator, with seamless multimodality the service offering. Bundling, retailing, and technology platforms that improve the customer experience will offer transformational responsiveness, safety, and congestion reduction
- Aerial mobility devices (e.g. drones) for use in emergency response where traditional networks are compromised (e.g. accidents, natural disasters)
- Smart vehicle technology features such as automatic braking and lane keep assist increasingly available in new vehicles to improve road safety
- Telecommunication improvements enabling people to travel less and undertake some work, study, shopping and health appointments at home
- Improving productivity and safety through exploring benefits of freight technology advances e.g. supply chain efficiencies of platooning, reducing human interaction
- Assisted mobility devices (e-bikes, segways, mobility scooters) enable people to travel further than traditional active transport (walking, cycling)
- Telecommunication improvements enabling people to travel less and undertake some work, study, shopping and health appointments at home, or at locations close to home
- Improved security systems such as CCTV and emergency contact buttons to increase passenger safety during journeys and at interchanges.

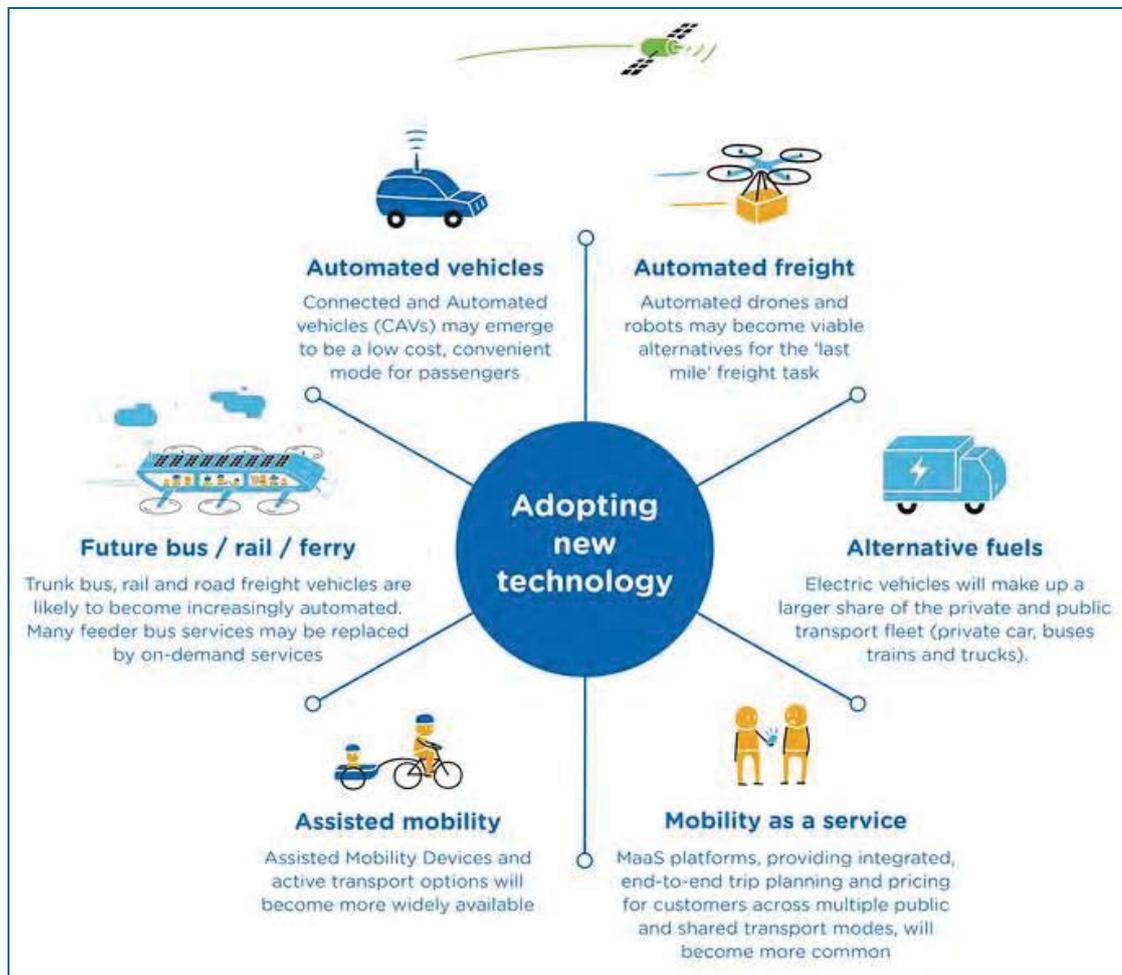


Figure 56: Technology and potential impact on the future of mobility

Opportunities for CAV Technology in Regional NSW

- Fully autonomous driverless vehicles (CAVs) expected post-2035, with benefits expected for passengers & freight
- Application as part of a flexible integrated public transport solution, providing first / last mile connections to trunk services (i.e. rail, coach, air, bus) or demand responsive services
- Freight technology advances to deliver improved productivity and safety outcomes e.g. supply chain efficiencies of platooning, reducing human interaction
- Trials/pilots suitable in regional universities or other campus like environments.



Figure 57: CAV Technology

Customer Outcome 5: Customers enjoy improved connectivity, integrated services and better use of capacity

An efficient and reliable network

We will plan for and build an efficient network in order to:

- provide shorter travel times and increased reliability
- keep our communities connected (especially for Inland and Remote geographies that are more reliant on the road network for connectivity)
- improve efficiency of east-west freight movements.

We will improve the efficiency of the network to/from our Satellite Cities to strengthen and maintain their 30 minute catchment to support the metropolis of Sydney / 5 Cities by 2056:

- We will provide for and take advantage of technology advancements to improve the efficiency of the transport system
- An integrated transport system that connects communities, consisting of:
 - services within centres
 - services between centres
 - services between regions.

Improved efficiency supports regional economies

Through improvements to networks and services, the transport system will not only support the growth and development in our Regional Cities and Centres but also support the Inland and Remote geographies.

Regional NSW's productivity and local economies will be supported by:

- improved accessibility, coverage and increased utilisation of existing assets
- embracing technology changes
- efficiency improvements for all modes (both passenger and freight)
- encouraging travel to attractions and destinations, supporting the visitor economy – a critical driver of prosperity for Regional NSW
- breaking down barriers to efficient cross-border travel.



Figure 58: Grand Pacific Drive, 140km scenic road along Illawarra coastline

Reduced first and last mile network constraints

We will reduce first and last mile network constraints for all users to improve connectivity:

Passenger

- The integrated network structure provides connectivity into centres
- Multi-modal interchanges in town's activity centres enable seamless connections with local services
- Utilise demand responsive services from remote interchanges into town centres
- Seamless and integrated interchanges between modes and services
- Easy and direct walking and cycling access to and from interchanges
- Supports movement and place function of centres and towns and their movement corridors
- Innovative / flexible options to increase productivity and connectivity on the network

- Private vehicle travel relies not only on motorways and highways but also the arterial and local roads to reach their destinations. The connections between these road types are important to journey times and reliability
- New point to point services will transform last mile and door to door connectivity.



Figure 59: Future transport interchange

Freight

- Continued additional investment in the road network through the Fixing Country Roads program, as well as harmonisation of heavy vehicle regulations will be required to overcome these problems
- Innovative / flexible options to increase productivity on the network should be considered (e.g. Red Bend silo – proposal to upgrade 4km of local roads from Newell Highway to enable road train access, resulting in greater economic value and fewer vehicle movements)
- Segregate passenger and freight rail movements in the Sydney Metropolitan network to enhance greater access for regional freight.

Improved connectivity to ports

Planning for future growth in the movement of goods across NSW and within our regional areas is critical to improve reliability in the import / export freight supply chain.

- Freight growth will place increasing pressure on access to the Port of Newcastle and Port Kembla.
- Duplicating the freight line in to Port Botany to deal with expected growth – this will improve freight connections to the Central West and Orana.

Port of Newcastle

- Further growth in export coal volumes from the Hunter will place growing pressure on the port and increase access challenges

Port Kembla

- There are existing challenges accessing Port Kembla, including interaction with the metropolitan network for volumes from Central West and Orana, sharing of the Illawarra line with passenger trains, as well as the limitations of Moss-Vale to Unanderra line
- Forecast volume increases, combined with future container overflow from Port Botany demand will place further pressure on the port and access and require better connectivity and additional linkages



Figure 60: Freight movements in NSW

Reliability on strategic corridors

- Sufficient capacity and productivity and reliability on major north-south and east-west road and rail strategic corridors
- Reduced journey times on major highway corridors
- Need to continue to invest in the regional highway network to support customer outcomes
- Significant investment has been made, is ongoing or is planned for the North-South network
- There is an imperative to strengthen / improve the East-West road / rail corridor network to improve connectivity and efficiency of movements

- Select investments will be needed to ensure strategic corridors can serve the growing freight task and improve network productivity
- Increased heavy vehicle access to improve the productivity of road freight journeys
- Select investments in the non-mainline rail network to improve rail freight productivity.

Improved productivity of the broader road network and rail network

- Heavy vehicle access investment to provide critical linkage from main roads (including Regional road network) to highways and strategic road corridors, while ensuring exposure to risk is managed
- Select investments in the non-mainline rail network to improve rail freight productivity. Parts of the broader rail network (beyond main line) have constraints - axle weight capacity, track speeds, siding lengths. However, upgrades to improve productivity need to be pursued selectively given widely varying cost-benefit ratios. The Fixing Country Rail program can continue to address improvements at the micro level (e.g. sidings, passing loops). However, significant improvements to the CRN network must be weighed in light of their strategic viability over time – particularly given changing network dynamics due to rationalisation in the grain supply chain
- In coordination with the Commonwealth, investigate improvements to lines leased by ARTC (remove speed restrictions, curve easing etc.)
- Improved connectivity for cross-border freight movements, in particular the Murray and Tweed.

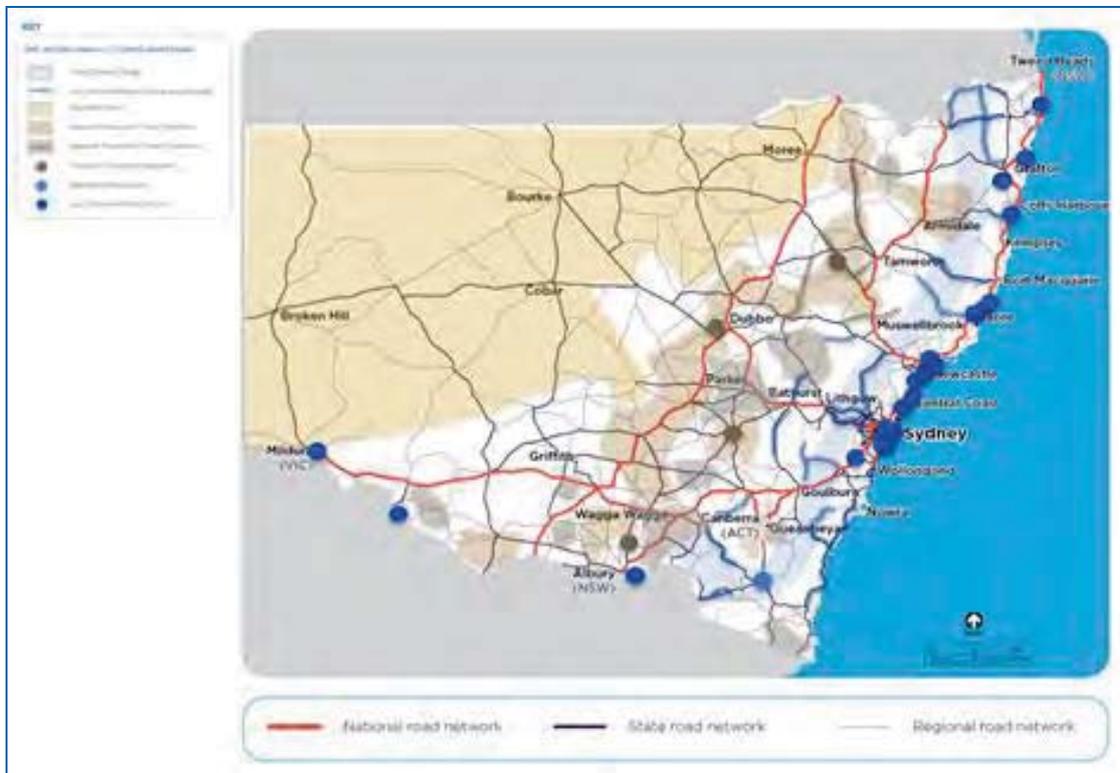


Figure 61: B-double routes in NSW

Crossing of the Great Divide

Opportunities to reduce first and last mile network constraints

- Primary focus on the Golden Highway in the near term to ensure maximum capacity is achieved through ongoing committed upgrades and investment
- Improvements for the crossing of the range from the Central West and Orana at Great Western Highway / Main Western Line corridor to ensure separation of passenger and freight through the Blue Mountains.

Opportunities to improve port accessibility

- Completion of the Maldon-Dombarton line to add rail freight capacity in and out of Port Kembla
- East-west connections from Inland Rail to the Ports to capitalise on Inland Rail

Opportunities for improved rail efficiency

- Upgrade of Main West line to enable additional passing loops and for freight to enter Sydney network at correct time with buffer to avoid the curfew which would also enable increased productivity of the line
- Improve connectivity for cross-border freight movements in particular the Murray and Tweed.

Greater connectivity between regions to increase opportunities

Regional public transport will be planned within a strategic framework of servicing principles which allow for local adaptation and interpretation.

The regional passenger transport servicing principles provide the strategic framework underpinning the passenger transport services provided in rural and regional areas.

The principles will inform ongoing improvements to services to meet the changing travel needs of customers in regional and rural areas.

Passenger transport service principles

- **Connectivity** - Providing an integrated network of services improves regional connectivity
- **Flexibility and efficiency** - Flexible service delivery can provide an effective and efficient service, where the alternative may be no service at all
- **Access and equity** - Delivering similar levels of transport access to areas of comparable size and/or with similar characteristics
- **Legibility and timeliness** - Services are easy to understand, and operate at the times people most need them
- **Information** - Comprehensive, accurate, information promotes confidence in the passenger transport system and delivers a positive customer experience
- **Safety** – Providing safe and efficient network services to improve regional connectivity.

Delivery of desired customer outcomes for different centre / journey type combinations in Regional NSW (co-designed in partnership with communities and the private sector)

Figure 62: Passenger transport principles to deliver desired customer outcomes

Integrated services incorporate:

- Connectivity into centres, with multi-modal interchanges providing connections with local services
- Innovative, flexible and demand responsive services from small towns and villages into town centres
- A hub and spoke, inter-connected network
- Innovative / flexible options to increase productivity and connectivity on the network

Operate within major population centres	Operate within towns & Regional Centres. / Connect towns & villages with Regional Cities or Centres	Operate in towns or villages / Provide services to small or isolated communities
<p>Direct and multifunctional. Operate across the day and across the week. Timetables are headway driven. Provide the core network of passenger transport services in Global Gateway Cities and Regional Cities.</p> <p>Indicators for Tier 1 services include:</p> <ul style="list-style-type: none"> • Population greater than 30,000 • A range of closely located facilities and services • Infrastructure to support integrated passenger transport operations. 	<p>Timetables may be based on providing a (spaced) number of trips rather than providing a regular headway. Trip times driven by connections with other passenger transport services, or by providing communities with forward and return trip (day return) opportunities.</p> <p>Indicators for Tier 2 services include:</p> <ul style="list-style-type: none"> • Populations 7,000 to 30,000 • Smaller towns and villages within approximately 60 minutes of a large town or Regional Centre, which can collectively be served by a reasonably direct service • Infrastructure to support integrated passenger transport operations. 	<p>Services are closely aligned with specific local demands. Provide return trip opportunities to Regional Cities/Centres. Days of operation may be limited. Routes may be non-fixed and demand responsive.</p> <p>Indicators for Tier 3 services include:</p> <ul style="list-style-type: none"> • Town populations less than 7,000 • Towns and villages remote from Tier 1 and Tier 2 services.
<p>Tier 1 Services Air, Train, Bus, Ferry</p>	<p>Tier 2 Services Train, Coach, Bus</p>	<p>Tier 3 Services School bus, Flexible Transport, Community Transport</p>

Figure 63: Passenger transport service tiers by size of settlement

Transport service levels

A simple transport network with a clear hierarchy of services, tailored to local communities that make better places and provide a level of service that provides flexibility for future service improvements and respond to community needs.



Figure 64: Transport network with a hierarchy of services

We cannot rely on the physical network alone to deliver the transport solutions we need

- Whilst infrastructure provision is important, it is just one lever which can be pulled along with policy and service provision
- There needs to be a focus on journey outcomes, not individual trips – appropriate modes and different models of service delivery
- Travel experiences need to be safe, but also more personalised, flexible and easy to use
- The diverse needs of different customer groups all need to be addressed with limited infrastructure/service supply
- The way we deliver services will change, including Government’s role. There will be a greater focus on customer outcomes – Government must anticipate and influence market forces to ensure the future transport landscape delivers on our objectives for the network
- There is a shift to TfNSW being the purchaser of services rather than the default provider
- Better land use planning will enable better management of the transport network, more efficient road space allocation and a reduced reliance on new infrastructure.

Improving regional aviation

Other state jurisdictions such as WA, Qld and NT have developed and implemented a regional aviation strategy. A sound strategy for the future of regional aviation in NSW could consider the following:

Access

- Airside access to Kingsford Smith and Western Sydney Airport and WSA: increase the availability of slots at KSA and change the way in which slots are allocated to include airports/destinations
- Landside access for all airports: Ground access strategies at all regional airports, with a funding mechanism to assist authorities to connect public transport

services with airports and consider timetabling, marketing and ticketing as a holistic product.

Infrastructure

- Consider the relaxation of safety and security compliance regimes to unburden councils
- Consideration of funding for airports to upgrade and maintain their infrastructure
- Improve corporate management and incentive structures at council owned airports or consider transferring operation and management to unburden councils.

Services

- Recognise regional air services as being essential through mechanisms such as the deregulation of routes and public service obligations, essential air service programs and route development funds
- Collaborate with all stakeholders to jointly develop routes and benchmark for performance and continue to monitor.

To be successful the strategy will need to consider integration across three facets:

1. Across all levels of government – federal, state and local plans, policies and legislation
2. Across all air service route types incl. trunk and thin routes, domestic, international, inter/intra-state and with the public transport network across all modes; and
3. With freight, general aviation, training and health provision for the regions.

Customer Outcome 6: The appropriate movement and place balance is established enabling people and goods to move efficiently through the network whilst ensuring local access and vibrant places

Making places for people through effective land use and transport planning.

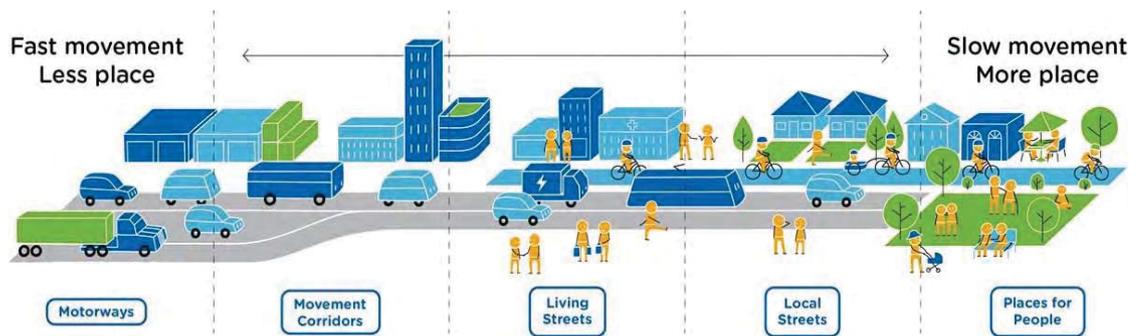


Figure 65: Movement and place framework to reflect surrounding land uses

Regional Cities

Key movement and place principles:

- Separation of through movement (Movement Corridors) and reinforced place based activity (Places for People)
- Time of day and day of week management of customer and business needs that consider both movement and amenity
- Prioritise access to centre for freight, walking, cycling, public transport, interchange and manage parking demand
- Focused investment on making more Places for People linked to key transport nodes through effective land use and transport planning
- Integrating safety features with road function, accounting for needs of different road users in each environment.



Figure 66: Orange - Regional City

Regional Centres

Key Movement and Place Principles:

- Separation of through movement (Movement Corridors) and supporting place based activity (Places for People)
- Time of day management of customer and business needs that consider both movement and amenity
- Facilitate improved access options to centre – improved walking, cycling, public transport and possible interchange options
- Focused investment on making Places for People linked to key transport nodes through effective land use and transport planning
- Integrating safety features with road function, accounting for needs of different road users in each environment.



Figure 67: Inverell - Regional Centre

Local Towns

Key Movement and Place Principles:

- Balancing needs of through movement and servicing local business (Vibrant Streets)
- Facilitate safe access to centre – improved walking, cycling, public transport and parking
- Strengthen and grow place making through effective land use and transport planning (e.g. lower vehicle speeds, footway access)
- Integrating safety features with road function, accounting for needs of different road users in each environment.



Figure 68: Dorrigo - Town Centre

Customer Outcome 7: Changes in land use, population and demand, including seasonal changes, are served by the transport system

An agile transport system

Incorporates:

- A transport network that connects communities conveniently and safely to their Regional Centre or city and onwards to Capital Cities
- A transport network which enables significant holiday and weekend movements associated with the visitor economy and seasonal demands
- Increased frequencies and span of hours for public transport services
- Delivers the most appropriate type of service for customer needs
- Improved port connections catering for significant freight movements and enabling improved market access.

An integrated transport and land use network

Responds to trends and the environment including:

- Population growth
- Demographics and trends within regions
- Urbanisation
 - from Metropolitan Sydney to the Central Coast
 - from rural areas to Regional Cities and Centres
- Densification and land use
 - along transport corridors
 - within identified centres
 - in proximity to areas of high land value and amenity.



Figure 69: Transport as a placemaker

Customer Outcome 8: Flexible transport services are an integral part of the transport system helping to deliver reliability and the most appropriate type of service for customer needs

Flexible transport services

Flexible transport services provide:

- Services that are agile and responsive to current and future customer needs
- Services that offer the right mode for the right task at the right time
- Demand-responsive service models which replace fixed route bus services in some areas, allowing customers to organise a service when they need it, providing a more personalised, door-to-door experience.
- Customers being able to book flexible local services to make first- and last-mile connections to and from transit hubs.

Flexible service delivery models:

- Provide personalised services
- Serve multiple destinations (particularly isolated communities)
- Respond to seasonal markets
- Enable customers to access services (e.g. health, shopping, etc.) that are not ordinarily available through regular scheduled services
- Deliver the most appropriate type of service for customer needs.

Transport journeys that could be improved through greater flexibility

- First mile / last mile transport to / from higher order public transport and customer homes to reduce car use
- Regions or routes where services are inadequate and lack integration with other modes e.g. poorly patronised and low frequency routes with long travel times or multiple interchanges e.g. late evening, or inter-peak services.

Technology has enabled an increase in customer-focused and/or commercial applications

Current examples are:

- point to point (taxis, rideshare)
- community transport
- flexible transport trials underway in the Central West / Far West and Central Coast
- emerging Mobility as a Service model overseas

In the short term – 3 models of flexible transport that could be introduced in Regional NSW:

1. **Complement** time limited mainstream local public transport services (i.e. scheduled bus services) in centre/large towns
2. **Replace** existing time or coverage limited mainstream local public transport service in towns
3. **Introduce** services for smaller towns where no mainstream public transport exists.

In the longer term – all local public transport services in Regional NSW could be flexible.



Figure 70: More demand responsive services expected in the future

Customer Outcome 9: Support the development of the Global Gateway Cities of Newcastle and Canberra

Growing importance of Newcastle as a Global Gateway City

- Newcastle has a catchment of over 1 million people
- Access to international markets through the Port and Airport; strong health and education precincts and economic development opportunities such as tourism; growth of specialised manufacturing and small-medium enterprises and a growing knowledge industry base
- Urban renewal opportunities with transformative light rail and frequent public transport connections
- Support and increase liveability, including more sustainable travel behaviour.



Figure 71: Proposed integrated transport network for Newcastle City Centre

Improved connectivity for Newcastle incorporates:

Public Transport

- A single operator taking multi-modal responsibility covering bus, light rail and ferry services
- Improved integration and interchange between modes/services to enable seamless customer experience
- Reinforce and develop “30 minute city” catchments

- Improved temporal coverage and service frequency, reduced journey times, and the deployment of demand responsive services
- Rail corridor infrastructure investment programs allow the new intercity fleet to operate to its operational capacity with significant travel time savings.

Freight

Protected freight through movements, reinforcing key links to the Port and Airport serving our Global Gateway City

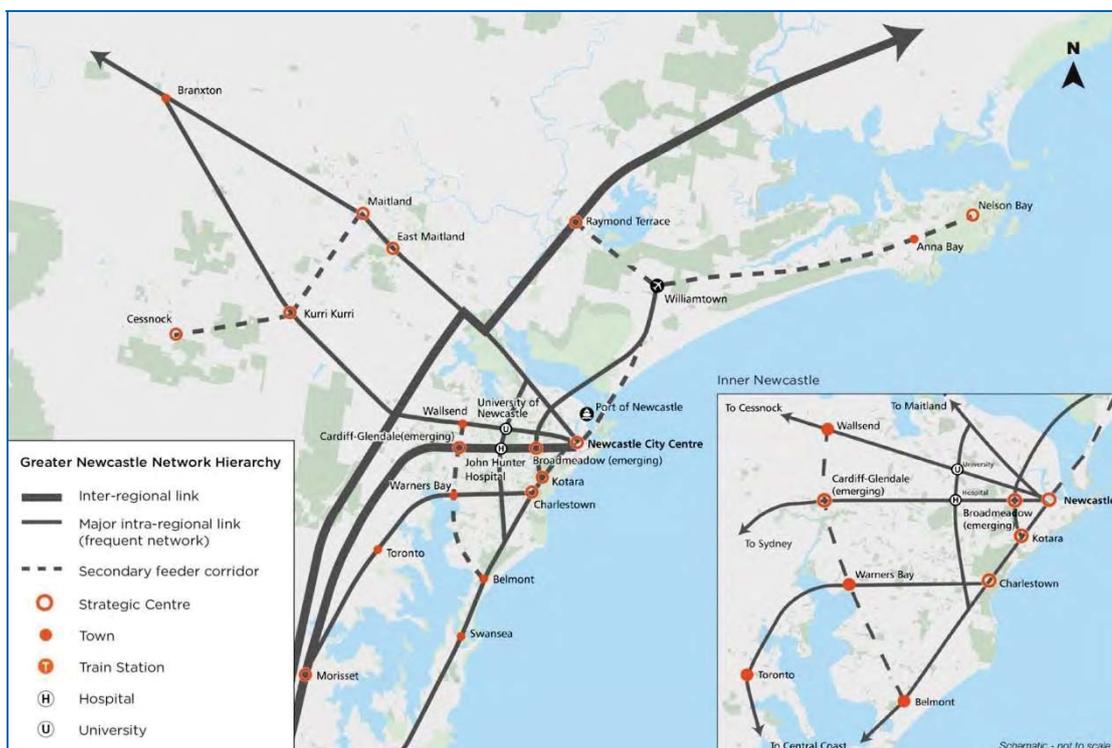


Figure 72: Greater Newcastle transport network hierarchy

Reinforce and develop “30 minute city” catchments for Newcastle

As transport demand increases:

- Expand 30 minute catchments for public transport
- Maintain 30 minute catchments for car journeys

Key levers are:

- Implementation of bus priority in key corridors
- Improved road planning
- Growing public transport mode share to reduce road congestion

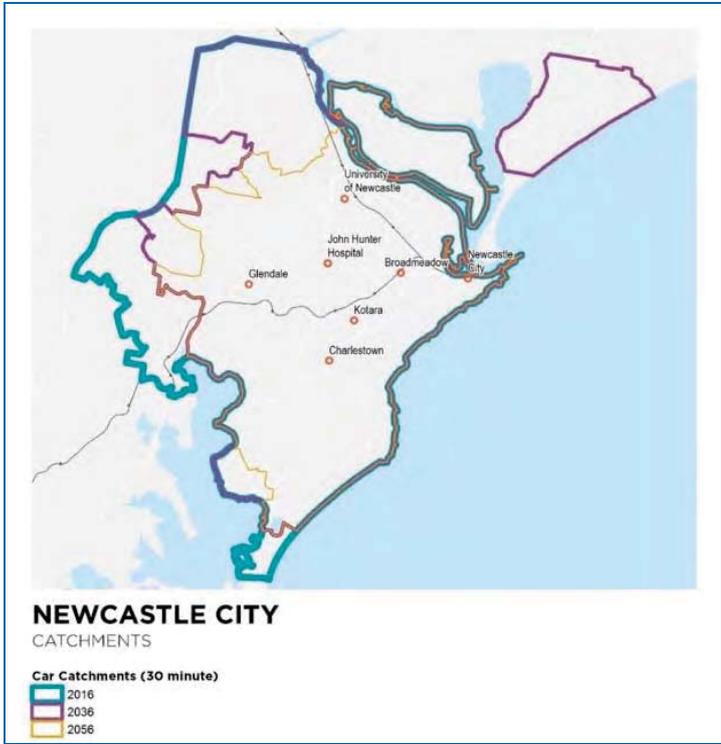


Figure 73: Newcastle City 30 minute car catchment over time



Figure 74: Newcastle City 30 minute public transport catchment over time

Growing importance of Canberra as a Global Gateway City

- The Greater Canberra catchment will continue to grow to a population of between 1 – 1.5 million people with Canberra becoming one of our Global Gateway Cities.
- Canberra will play a dual role as the Global Gateway and major services hub for parts of the Murray-Murrumbidgee region, with key connectivity to the Regional City of Wagga Wagga.
- People living in the Greater Canberra catchment will rely on Canberra as their major city, providing major health services (Canberra Hospital), major education facilities (Australian National University, University of Canberra etc.), major commercial core (City Centre), and global connectivity (Airport).
- The City Centre will be supported by a number of strategic centres within the metropolitan area such as Belconnen, a Regional City at Queanbeyan, and Regional Centres within the broader region such as Goulburn and Bega.

Improved connectivity for Canberra

Public Transport

- Improved integration and interchange between modes/services to enable seamless customer experience
- Reinforce and develop “30 minute city” catchments
- Improved temporal coverage and service frequency, reduced journey times, and the deployment of on-demand services
- Investigate extensions of light rail to Queanbeyan

Linking Global Gateway and Satellite Cities to Sydney

- The demand for travel between Sydney and the Cities of Newcastle and Canberra will continue to grow as global connections become increasingly important. With recent significant investment in road infrastructure on these corridors, alternate public transport links have significant room for improvement in journey times to become competitive with car and air travel
- Emerging technologies for land based long distance travel are rapidly evolving however tested and proven methods of transport remain some time off and the previously federally investigated (2012) mode of high speed rail (HSR) was not deemed to be feasible until the 20+ year timeframe
- Whilst the operation of emerging technologies are likely to be some way off, investigations into corridor preservation based upon the most constrained design criteria (HSR) should be investigated within the 10-20 year timeframe.
- Considering the challenging terrain to the north of Sydney and the nationally strategic destinations of Canberra and Melbourne suggests higher priority should be given to developing the latter corridor (i.e. Sydney-Canberra)
- Another constraint for the implementation of higher speed connections is the requirement to navigate the complex urban environment and established transport network of Greater Sydney. To increase the potential passenger

catchment and to build upon the benefits of reinforcing the Central City, it is recommended that any higher speed connection travelling through Greater Sydney that enter from Campbelltown and Hornsby pass through Parramatta where rapid connections to the metro network would provide access to the Eastern and Western Cities

- In the short term it is recommended that the rail corridor infrastructure investment programs (faster rail) to the south east (Illawarra), north (Newcastle / Central Coast) and south west (Canberra) be prioritised to allow the new intercity fleet (NIF) to operate to its operational capacity for the benefit of both passenger and freight flows with significant travel time savings. This investment will be required independently of the introduction of higher speed connections which would appeal to different rail travel markets (i.e. less or no stops and potentially higher fares).

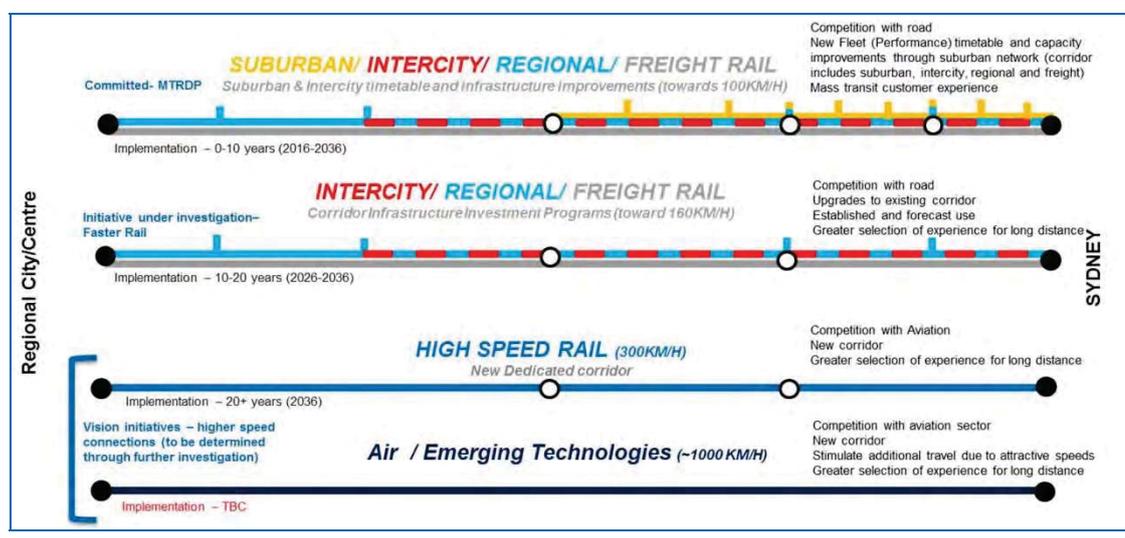


Figure 75: Options for connecting Global Gateway Cities to Sydney

Customer Outcome 10: Improved efficiency of the network to/from/within the two Satellite Cities of the Greater Sydney by 2056 – Gosford and Wollongong

Key outcomes for Gosford

- Improved access to the northern and southern growth corridors with frequent public transport connections
- Improving the accessibility of the Central Coast to Greater Sydney and to the Global Gateway City of Greater Newcastle by public transport and private vehicle
- Supporting urban renewal and increased accessibility and liveability of key centres through improved transport connections
- Providing for the diverse travel needs of transport customers, including the large numbers of discretionary trips made throughout the day within the Central Coast as well as early morning and late evening commuters leaving the region
- Improved road safety in Gosford, Central Coast and Greater Newcastle region through latest safety features to reduce trauma.



Figure 76: Central Coast transport network hierarchy

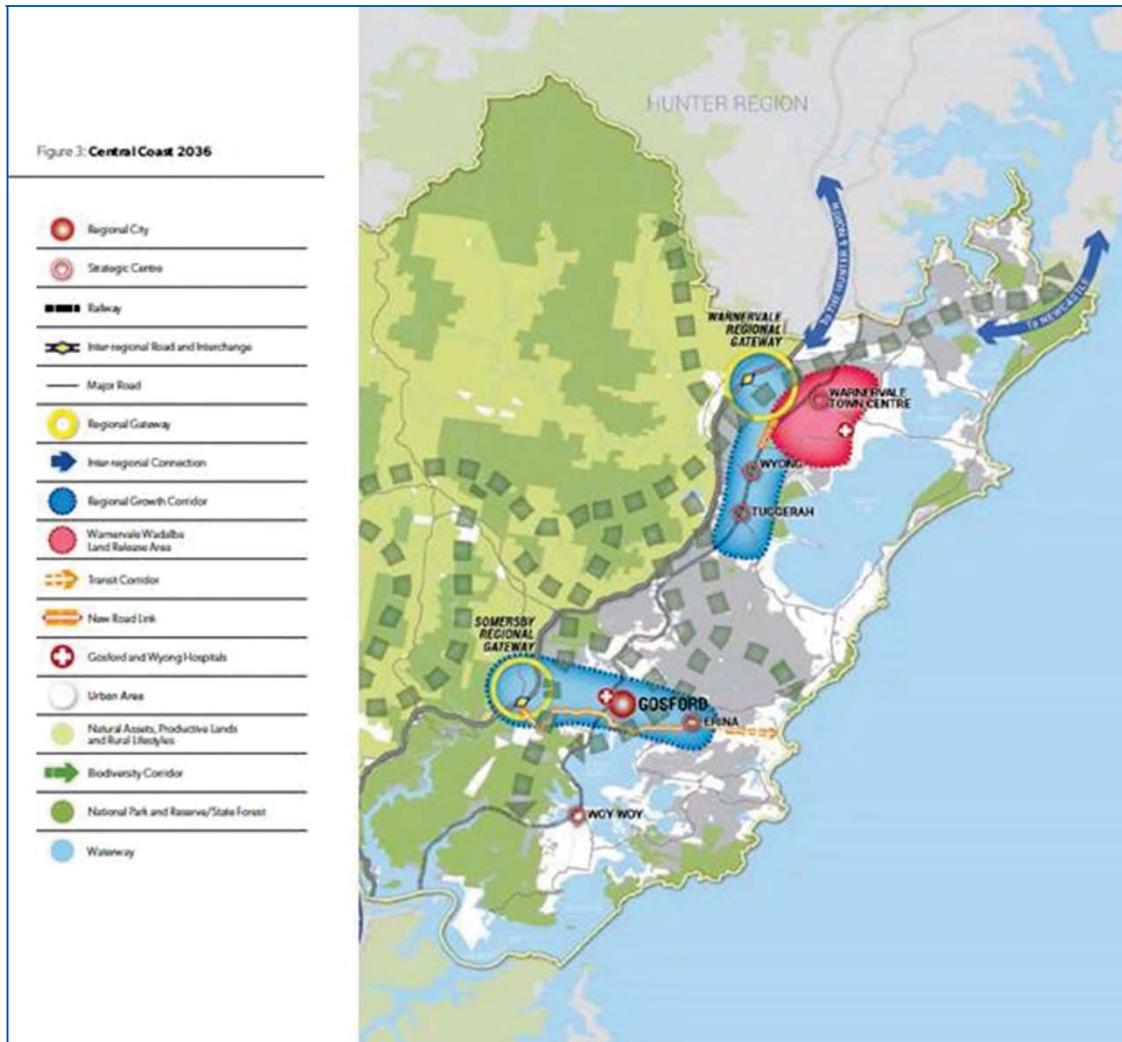


Figure 77: Central Coast land uses and transport connections (Source: Department of Planning and Environment Regional Plan)

Improved network efficiency to/from the Satellite City of Gosford

Faster rail to Central Coast and Newcastle

- Transport for NSW has investigated infrastructure options to deliver significant journey time savings on key intercity rail corridors, including the Sydney to Newcastle rail corridor
- Seven deviations have been identified which when combined with the new rolling stock and an express travel pattern, will provide up to 40 minutes travel time saving between Broadmeadow and Central.

Connection to the Western City of Sydney

- The Outer Sydney Orbital will provide a regional road and rail corridor to connect the Western City with the Central Coast.

Enhancing public transport

- Intercity fleet replacement program
- Advanced Train Control System
- Freight Separation Program (Northern Sydney Freight Corridor, Stage 2)

Enhancing the road corridor

- Delivery of the NorthConnex link between the M1 and M2 Motorways
- M1 Motorway corridor improvements to improve safety, travel speeds and capacity
- Smart Motorway investigations on the M1 Pacific Motorway

Freight

- Protect freight through movements, and protect and reinforce key links to the Ports serving our Satellite Cities

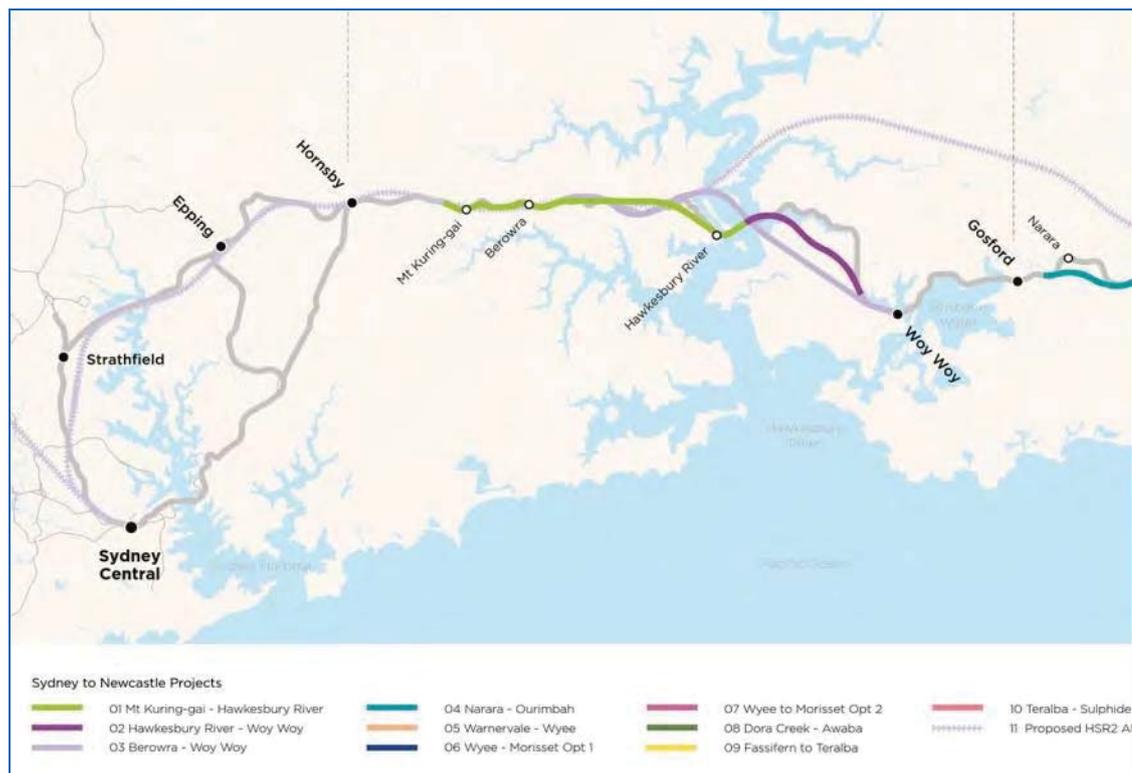


Figure 78: Faster rail to Central Coast and Newcastle

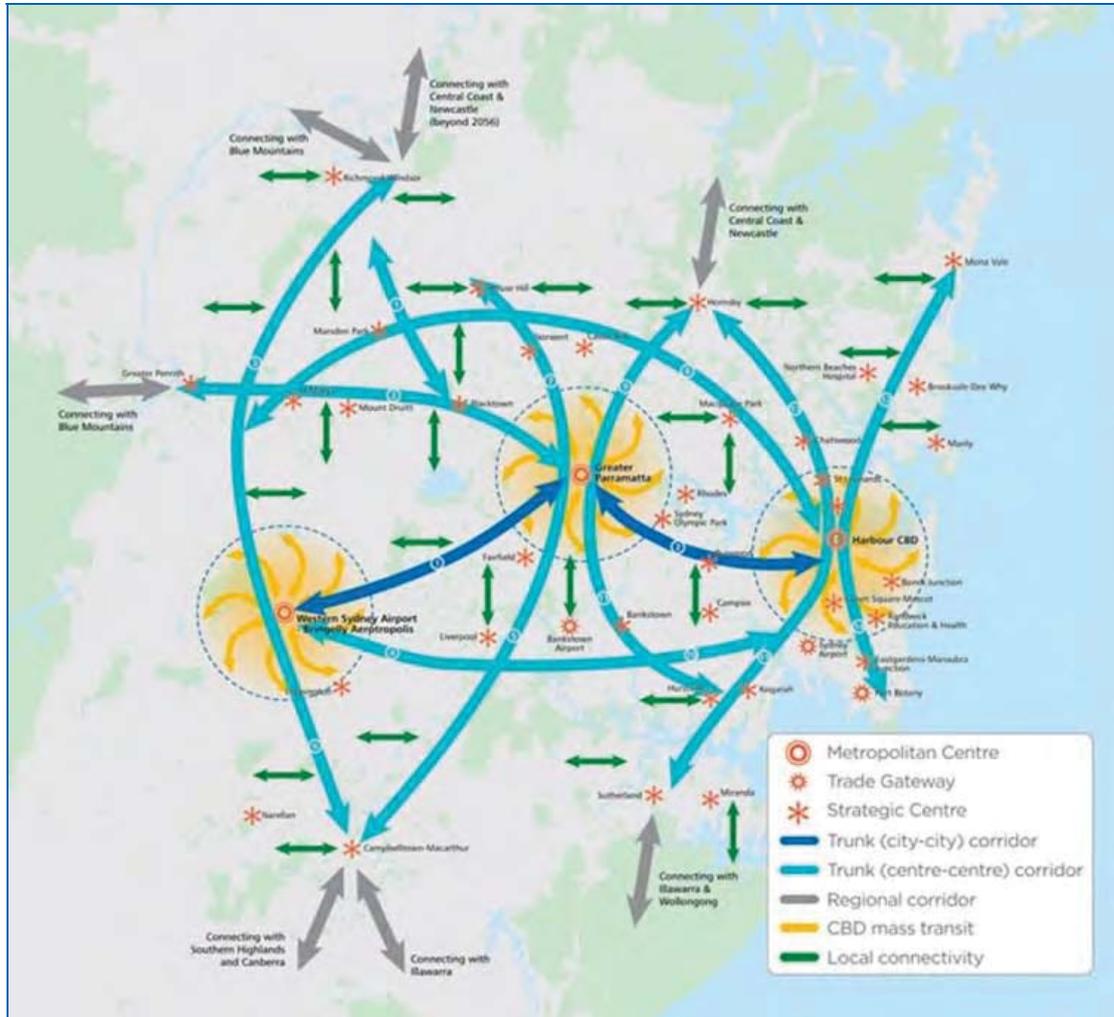


Figure 79: Greater Sydney strategic transport corridors

Key outcomes for Wollongong

The Regional City of Wollongong will evolve to become a Satellite City as part of the Greater Sydney conurbation by 2056. The City will evolve to strengthen critical linkages to jobs and services within Greater Sydney, due to its proximity and improved road and rail connections.

Freight transport connections between the Port Botany and Port Kembla are important. Port Kembla will act as a progressive overflow facility for Port Botany once its operational capacity has been reached, expected to occur after 2040.

The M1 Princess Motorway and the Main South freight and passenger rail line provide the regional road and rail corridor that connects the Central and Eastern Central City to the Central Coast.

Key transport outcomes include:

- Improved accessibility of Wollongong to Greater Sydney by public transport and private vehicle
- Improved access to Port Kembla, an international trade gateway
- Increased accessibility of the Wollongong City Centre, ensuring that the Centre's strong assets of its education, health and businesses precincts are connected, while also supporting access to the harbour
- Support and increase liveability, including more sustainable travel behaviour
- Improved road safety in Wollongong through latest safety features to reduce trauma.

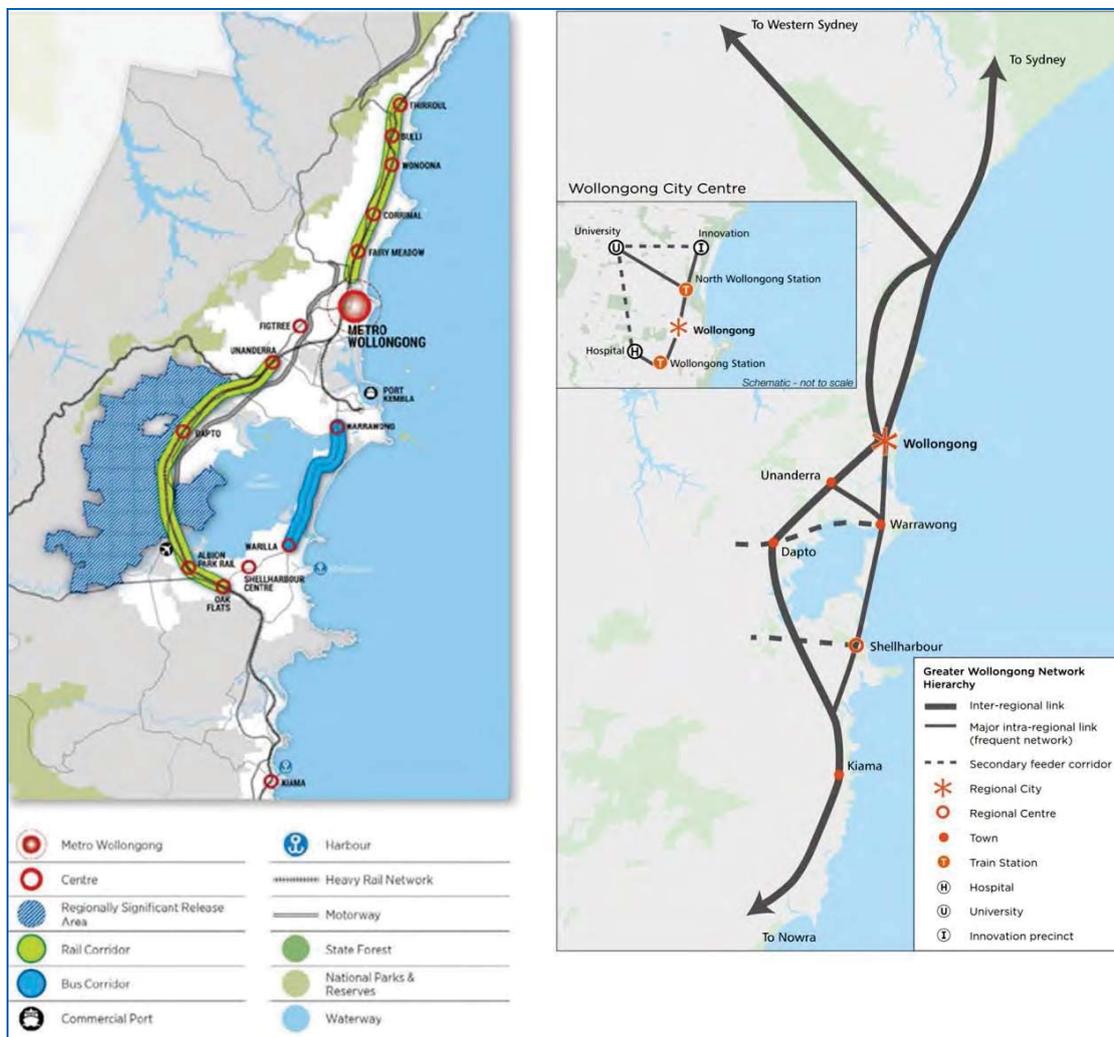


Figure 80: Greater Wollongong transport network hierarchy

Connecting the Illawarra to Greater Sydney (Central City)

Enhancing public transport

- Rail improvements between Sydney and Wollongong

- Replacement of intercity fleet
- Freight separation program on the Main South Line to Port Kembla and Southern Illawarra

Enhancing the road corridor

- M1 Princess Motorway improvements
- Princes Highway upgrade to 4 lanes and town bypasses
- Smart Motorway



Figure 81: New Intercity Fleet

Connecting the Illawarra to Greater Sydney (Western City)

Enhancing public transport

- Between Campbelltown and the Illawarra, it is proposed to run high frequency limited stop intermediate transport services along the northern link. With the proposed Western Sydney North-South train link, the Illawarra also becomes connected to the new airport
- Lower frequency intermediate transport will also operate from the Wollondilly Shire to the Illawarra via the southern road corridors including potentially the Outer Sydney bypass

Enhancing the road corridors

- There are two existing road corridors that will be upgraded by 2056 to accommodate the expected increase in population south of Campbelltown. In addition, the Outer Sydney bypass will also connect the Illawarra to Campbelltown
- Appin Road in the north will enhance links between the growth areas of West Appin, Menangle Park and Mt Gilead to Wollongong and will ideally include bus priority measures along the corridor

Connecting the Illawarra with other Capital Cities

- Illawarra Airport will be served by flights to/from other Capital Cities across Australia

Improved network efficiency within the Satellite Cities of Gosford and Wollongong incorporates:

Public Transport

- A single operator in each Satellite City taking multi-modal responsibility covering bus, light rail and ferry services
- Clear route hierarchies based on function and demand
- Improved temporal coverage and service frequency, reduced journey times, and the deployment of demand responsive services
- Implementation of bus priority in key corridors
- Expand 30 minute catchments for public transport

Freight

- Protect freight through movements, and protect and reinforce key links to the Ports serving our Satellite Cities

Integrated networks

- Make it easier for all to move within, to and from, and through the City Centre
- Provide access to, from and within Satellite Cities by a range of transport modes with greater flexibility
- Support active modes for local trips (<5kms), buses for intermediate trips (5-10km) and rail or car for regional and inter-regional trips
- Improve integration and interchange between modes/services within City Centres to enable seamless experience

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Glossary

Term	Definition
30 Minute City	A planning concept for a city in which citizens can easily access the places they need to visit on a daily basis within 30 minutes travel from where they live.
Accessibility	The ability for everyone, regardless of disability or special needs, to use and benefit from the transport system.
Active transport	Transport that is human-powered, such as walking or cycling.
Active Transport (Walking and Cycling) Program	Programs to improve walking and cycling connections within major centres and at public transport interchanges.
Aerotropolis	A metropolitan subregion where the layout, infrastructure, and economy are centred on an airport which serves as a multimodal "airport city" commercial core. It is similar in form to a traditional metropolis, which contains a central city commercial core and commuter-linked suburbs. The area around Western Sydney Airport (WSA) is envisaged to perform this role.
Alternative fuels	Fuels derived from sources other than petroleum. Examples include ethanol, electricity, biodiesel and natural gas.
Amenity	The extent to which a place, experience or service is pleasant, attractive or comfortable. Improved features, facilities or services may contribute to increased amenity.
Arterial roads	Main roads that carry high volumes and generally form the main freight routes.
Assisted Mobility Devices	Forms of transport that facilitate individual personal transportation. Examples include powered wheelchairs, scooters, segways, bicycles and unicycles. Although many such devices are used by people with activity or mobility restrictions, mobility aids can be employed generally such as for transportation in place of private vehicles.
Automation	Use of control systems, such as computers, robots or artificial intelligence to undertake processes previously done by humans. Transport technology may be fully or partially automated, with the latter involving some form of human input to or manage the technology.
Better Use	Optimising existing and new infrastructure to extract the maximum sustainable capacity from the network. Examples include re-allocating road space to vehicles that can carry more people in the same amount of space.
Bridges for the Bush Program	NSW Government investment in critical infrastructure to remove significant freight pinch points or bottlenecks on the state road network and to improve the safety and reliability of some old bridge structures.

Term	Definition
Bus Headstart	New bus routes implemented in new growth areas.
Catchment	The area from which a location or service attracts people.
Central River City	One of the three cities of the Greater Sydney metropolis, anchored by Greater Parramatta in the Central City District.
Child Restrain Evaluation Program	Program to provide child restraint ratings to help inform parents about safety of child restraints prior to purchase.
Coastal geography	The area broadly represented as between the Great Dividing Range and the NSW coastline. It excludes Greater Sydney and the Outer Metropolitan area.
Committed initiatives (0-10 years)	Initiatives funded for construction or contractually committed as part of key maintenance, renewal or safety programs. Some are subject to final business cases.
Commuter car parks (CCPs)	A car park near an interchange where customers can leave their car and connect to a transport service such as a ferry, train or bus.
Congestion	When demand for a part of the transport network during a particular time nears its capacity, resulting in lower average speed, increased delay and unreliable journeys.
Connected and Autonomous Vehicles (CAVs)	A motor vehicle such as a car, truck or bus that uses technology to share data wirelessly with other vehicles, infrastructure, transport management systems and mobile devices (connected) and has one or more of the primary driving controls (steering, acceleration, braking) that are automated for a sustained period of time (automated). Levels of automation range from automated applications that assist the human driver with the driving task, through to fully and highly automated vehicles that can drive themselves.
Conurbation	The merging of separate cities generally through population growth and physical expansion to form an extended urban area.
Corridor	A broad, linear geographic area between centres or trip generators.
Customer	Everyone who uses transport services or infrastructure is a customer of the NSW transport system. Whenever a person drives, travels by train, bus or light rail, or walks or cycles they become a customer of the transport system. Our customers also use our transport networks for business purposes, to deliver goods and services, and to move freight across the State and beyond.
Customer outcomes	What customers can expect from the transport system.
Demand-responsive (or on-demand)	Transport services that are run based on the demands of individual customers, rather than a fixed timetable or route.
Disability Discrimination Act	A Commonwealth Act that makes it unlawful to discriminate against a person, in many areas of public life, including:

Term	Definition
(1992)	employment, education, getting or using services, renting or buying a house or unit, and accessing public places, because of their disability.
Driver Licensing Access Program	Program that helps remove the barriers that prevent disadvantaged Aboriginal people and other disadvantaged communities in NSW from entering the licensing system.
Drones	An unmanned aerial vehicle (UAV) which may be remotely controlled or can fly autonomously.
Eastern Harbour City	One of the three cities of the Greater Sydney metropolis, spanning the North, Eastern City and South Districts, anchored by the Harbour CBD.
Enhanced Enforcement Program	Partnership with the NSW Police Force, including the expansion of Mobile Drug Testing.
First mile / last mile	A term applied to the first and final stage of a journey in which people or goods travel to a broad range of origins or destinations. An example of a last mile journey is the trip made between a train station and the final destination of a shopping centre or place of work.
Fixing Country Rail	NSW Government program that provides targeted funding for rail infrastructure enhancement projects that eliminate connectivity constraints on the NSW regional rail network.
Fixing Country Roads	NSW Government program that provides targeted funding to local councils to repair and upgrade Regional NSW roads.
Fleet	The collective vehicles of a transport company or service.
Flexible transport	The same definition as demand-responsive transport.
Freight	Goods or cargo transported by truck, rail, aircraft or ship.
Geographies	Used in the Draft Regional NSW Services and Infrastructure Plan to differentiate between the different areas of NSW. The geographies have different population densities and growth rates, which influences how transport is provided and transport networks are structured. They include the Remote, Inland, Coastal and Outer Metropolitan geographies.
Global city	Cities that service and support the complex and specialised economic activities of global markets.
Global gateway	Cities that provide state level services and facilities to support a broad population catchment while also having international connections through their airport and/or port. Canberra, Greater Sydney and Greater Newcastle are examples of global gateway cities.
Greater Newcastle	The area encompassed by the five local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port

Term	Definition
	Stephens.
Greater Parramatta	The central business district of Parramatta includes Parramatta City, and the precincts of Westmead, Parramatta North, Rydalmere and Camellia.
GPOP	The Greater Parramatta and the Olympic Peninsula - a 4,000-hectare area in Greater Sydney. It spans 13 km east–west from Strathfield to Westmead, and 7 km north–south from Carlingford to Lidcombe and Granville. GPOP is the geographic and demographic centre of Greater Sydney.
Greater Sydney	The 33 local government areas of Bayside, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury-Bankstown, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, Northern Beaches, North Sydney, Parramatta, Penrith, Randwick, Ryde, Strathfield, Sutherland, The City of Sydney, The Hills, Waverley, Willoughby, Wollondilly and Woollahra.
Greater Sydney Commission (GSC)	An independent organisation funded by the NSW Government, responsible for coordinating and aligning the planning that will shape the future of Greater Sydney.
Greater Wollongong	The area encompassed by the two local government areas of Wollongong and Shellharbour.
‘Green On Green’ Pedestrian Protection Program	Program to better-protect pedestrians from turning vehicles at intersections by installing new traffic light infrastructure and changing the timing of lights to give pedestrians their own green light or more time to cross before traffic starts turning.
Hub and spoke	A transport network model that provides connections (spokes) to and from key centres (hubs). The spokes link to different hubs across an area, rather than focussing on one key hub.
Infrastructure NSW (iNSW)	An Independent statutory agency responsible for assisting the NSW Government with identifying and prioritising the delivery of critical public infrastructure for NSW.
Initiatives for investigation (0-10 years, 10-20 years)	Initiatives intended to be investigated for potential commitment or implementation within the next 20 years. Those listed in the 0-10 year horizon will be prioritised for more detailed investigation to determine if they are required in the next decade. They are prioritised based on their expected benefits or strategic importance. Initiatives proposed for investigation are unconstrained by affordability and will be subject to strategic business cases that consider a range of possible solutions.
Inland geography	The area broadly represented as between the Great Dividing Range and the Remote geography in NSW.
Inland rail	A proposed 1,700km freight rail link between Melbourne and Brisbane via regional Victoria, New South Wales and Queensland.

Term	Definition
Intelligent Transport System (ITS)	Refers to embedding sensors and communication devices into transport infrastructure (e.g. roads, bridges, rail lines, trains, buses) that allows them to take measurements and provide information about usage, congestion, asset wear and tear, and possible maintenance issues.
Interchange	A facility to transfer from one mode of transport, or one transport service, to another. For example, major rail station, bus facility or park and ride.
Intermediate transit	Intermediate transit includes buses, ferries, light rail and point-to-point transport such as taxis and rideshare. It has a key role in providing access for customers to mass transit and serving customers on corridors where mass transit is not available.
Intermodal terminal	An intermodal terminal is an area of land used to transfer freight between at least two modes of transport. It is typically used to describe the transfer of international shipping containers from road to rail and vice versa.
Intersection Safety Infrastructure Program	Investment to accelerate treatment of high risk intersections.
Journey	For the purposes of this document, the term journey refers to the door-to-door movements of a customer through the transport system. A journey may include several sections, or legs, and may use more than one mode of transport.
Land use planning	The scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities.
Landside access	Ability for people to travel to and from airport infrastructure.
Last Mile Productivity Program	Package of works that will focus on improving first and last mile connectivity and efficiency for the freight network.
Level Crossing Improvement Program	Funding for level crossing upgrades and initiatives to support safety awareness and police enforcement campaigns.
Light rail	An urban railway transportation system using vehicles that are capable of sharing streets with vehicular traffic and pedestrians, but may also be operating on an exclusive right-of-way such as a segregated rail corridor, tunnel or elevated structure.
Liveability	The term 'liveability' is used in land use planning to focus on the people who live in an area, the places they spend time in, their health and quality of life as well as overall community wellbeing.
Local Government Road Safety Program	A partnership between Transport for NSW, Roads and Maritime Services and partnering local councils of NSW to provide information and assistance on safe road use to all road users.

Term	Definition
Mandatory Alcohol Interlock Program	Program to ensure drivers convicted of serious and repeat drink driving offences are restricted to driving vehicles with alcohol interlock devices for a period of time when they return to driving.
Maritime Safety Program	Delivery of the NSW Regional Boating Plans.
Mass transit	The transportation of large numbers of people by means of high capacity vehicles, especially within urban areas.
Metro	An urban railway transportation that is associated with high capacity, high frequencies (typically turn-up-and-go, rather than timetabled) and greater automation.
Metropolitan Centre	The central social and economic hubs of Greater Sydney's three cities, namely the Harbour CBD in the Eastern Harbour City, Greater Parramatta in the Central River City and an emerging Western Sydney Airport-Badgerys Creek Aerotropolis in the Western Parkland City.
Mobility	The ability to move or be moved easily and without constraint.
Mobility as a Service (MaaS)	A business model for customers to access transport services in which customers can use a single account and booking interface to access a broad range of transport modes, none of which the customer owns. Examples would be allowing a customer to access public transport, car sharing and bike sharing all using the same system.
Mode	The type of vehicle or method used for a trip. For example, train, bus, light rail, car, motorbike, bicycle, ferry or walking.
Mode Share	The proportion of overall trips that are taken on a particular mode.
Movement	The movement of people and goods on the transport network.
Movement and Place Framework	A suite of technical documents that provides the framework for road planning based on a 'one road network' approach, consisting of roads and streets that have supporting functions and considers: <ul style="list-style-type: none"> • movement needs of all our customers and the modes they use to travel • places where our customers are starting and finishing their journeys.
Net zero	The NSW Government has committed to an aspirational objective of achieving net-zero emissions by 2050. Net-zero emissions means NSW emissions will be balanced by carbon storage. The more emissions are reduced, the less sequestration is needed to achieve net-zero.
New Intercity Fleet	A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast.
NSW Long Term Transport Master	NSW's first integrated transport plan, which brought together planning for freight and passenger movements across all modes

Term	Definition
Plan	of transport. Future Transport builds upon the 2012 Long Term Transport Master Plan and the commitments it has delivered.
NSW Transport Cluster	A group of agencies consisting of Transport for NSW, the operating agencies of Roads and Maritime Services, Sydney Trains, NSW Trains, and the State Transit Authority, the state's private transport operators, a number of project delivery offices for major transport projects, and the Port Authority of NSW.
Our Sydney 2056: Greater Sydney Commission's Regional Plan	Greater Sydney Commission's long-term land use plan for Greater Sydney to sustain and enhance the city's productivity, liveability and sustainability.
Outer Metropolitan Area / geography	An area encompassing the local government areas of Shellharbour, Wollongong, Central Coast, Lake Macquarie, Cessnock, Maitland, Newcastle and Port Stephens.
Outer Metro Roads Program	Program to identify improvements needed for the road networks within the Outer Metropolitan Area.
Patronage	Number of customers using a transport service during a particular period.
Peak travel	Refers to travel taken during the periods of 6am-9am or 3pm-6pm on weekdays, excluding public holidays.
Pedestrian Safe Sydney Program	Package of road safety infrastructure measures to improve safety at key high risk pedestrian hot spots.
Personalised transport	An umbrella term used in this document to refer to a world in which technology is used to make transport services and the overall transport network responsive to the needs of customers. These customers may be individuals or companies, and they may be accessing the transport network as public transport users, road users, pedestrians, or for the movement of goods. Personalised transport means understanding the specific needs of each customer, and adapting the transport network and services it provides to suit those needs.
Place	Destinations in their own right where activities occur, supported by the adjacent land use. These places attract non-motorised customers (typically pedestrians) for a range of activities and may include shopping streets, transport interchanges and employment centres which play an important role in the economy.
Place-based	Thinking and decisions that respond and consider the different characteristics of places.
Place-making	Successful placemaking either preserves or enhances the character of our public spaces, making them more accessible, attractive, comfortable and safe.
Point-to-point	Transport services that go directly from a passenger's origin to their destination. Outside of the private car, taxis and ridesharing services (Uber, Lyft) are the most common point-to-point transport

Term	Definition
	modes.
Port Efficiency, Access and Integration Package	Road and rail projects to improve port access, efficiency and integration.
Precinct	A geographical area with boundaries determined by land use. For example, an area where there is an agglomeration of warehouses may be termed a freight precinct.
Precinct Plan	Plan to deliver improved access to/from/within key precincts by all modes.
Private Vehicles	Passenger vehicles, motorcycles and trucks, owned and operated by those with a driving license and appropriate registration.
Rail Network Optimisation Program	Program that aims to improve efficiency in rail services.
Rapid bus package	Implementation of programs to prioritise access for buses over private vehicles.
Real-time information	Generally applied to either data or analytics in this document. Real time data is information about the status of the transport network and services that are completely live or have a lag of less than a minute or two. Real time analytics refers to analysis that is performed on real time data (generally automatically and without input from a human analyst) and is then used to make decisions or take action immediately.
Regional Airports Program	Landslide access improvements to increase the efficiency, accessibility, competition, commercial viability and sustainability of regional aviation in NSW.
Regional Centre In Town Access Improvement Program	Program to improve in town access and amenity in regional cities and centres.
Regional Interchange Program	Upgrades of major interchanges to encourage public transport use by providing accessible, easy to use, safe and secure interchanges between modes.
Regional NSW	The area of NSW outside Greater Sydney. It includes the nine regions of Central Coast, Hunter, North Coast, New England North West, Central West and Orana, Far West, Riverina Murray, South East and Tablelands and Illawarra-Shoalhaven.
Regional Parking Guidelines	Development of a strategy for the delivery of parking in Regional NSW.
Regional Rail Fleet Program	Program to deliver a new regional rail fleet, including the replacement of the XPT, XPLOER and Endeavour trains.

Term	Definition
Regional Transport Hubs	Regional cities that will perform a hub focus for transport into the future.
Remote geography	The area broadly represented as west of Dubbo and Griffith in NSW.
Resilience	The ability of infrastructure systems and services to withstand unexpected climate, weather and catastrophic events.
Resilience Package	Program to support immunity for flood prone regional roads.
Ridesharing	Business models similar to Uber and Lyft within which private citizens provide point-to-point transport services to other citizens.
Road hierarchy	A framework for categorising roads by function. Consistent with the Movement and Place Framework, the hierarchy consists of Motorways, Movement Corridors, Living Streets, Local Streets and Places for People. Each type of road has a different movement and place function.
Road Safety Communication Campaign Annual Program	Delivery of integrated suite of road safety communication campaigns across NSW to address a range of road safety issues including speeding, drink driving, drug driving, fatigue and illegal mobile phone use.
Road Safety School Education Program	Program to deliver mandatory road safety education in schools across NSW.
Roads and Maritime Services (RMS)	Agency of the New South Wales Government responsible for building and maintaining road infrastructure and managing the day-to-day compliance and safety for roads and waterways.
Rolling Stock	Refers to all vehicles that move on rail, including passenger carriages, powered (locomotives) and unpowered (wagons) rail vehicles.
Safer Drivers Course	Program to help drivers on their L-plates prepare for driving solo when they graduate to provisional licences by teaching them how to manage road risks.
Safer Roads Infrastructure Program	Program of road safety infrastructure projects to address key crash types across NSW.
Safe System Guidelines Framework	Development and implementation of a framework to identify safety measures known to reduce road trauma and based on Safe System design principles.
Satellite city	The cities that will form part of the conurbation of Greater Sydney.
Sealing Country Roads Program	Program of works to progressively seal unsealed roads in Regional NSW.
Self-Drive Car Share Accessibility Package	Provide support for development of car share across Regional NSW.

Term	Definition
Service (or transport service)	Service in this document refers to transport services, generally public transport services. Examples include trains, buses, light rail and ferries. Services might also include shuttle buses and a range of privately operated but publicly accessible transport types.
Slopes and Culverts Condition Program	Program of works to progressively improve the conditions of slopes and culverts in the transport network.
Slots	The right granted by an airport that allows an aircraft to land or depart during a specific time period.
Smart Motorway	Motorways that use embedded sensors, analytics and customer feedback tools to actively manage congestion and safety and respond to traffic incidents.
State Infrastructure Strategy	The State Infrastructure Strategy was developed by Infrastructure NSW to provide the NSW Government with independent advice on the infrastructure needs of the State over the next 20 years.
Sydney City	Located within the Eastern City, includes the contiguous areas of Sydney CBD, Barangaroo, Darling Harbour, Pyrmont, The Bays Precinct, Camperdown-Ultimo Health and Education, Central to Eveleigh, Surry Hills and Sydney East.
Three cities	The three cities envisaged by the Greater Sydney Commission are the established Eastern Harbour City, the developing Central River City and emerging Western Parkland City in and around the new airport. Each of these three cities will have their own unique identity and each must be planned to maximise liveability, productivity and sustainability.
Trade Gateway	Trade gateways are locations with major ports or airports, and their surrounding precincts. They perform an essential and ongoing role to connect Sydney with locations across Australia and the world. Transport gateways are vital to Sydney's prosperity and often support large concentrations of complementary business activity and employment.
Train	A mode of transport that carries people or goods on dedicated rail corridors. It may refer to suburban trains or metro-style trains.
Transport disadvantage	Where access to transport is unequally distributed, low income earners, the elderly and the unemployed can be disadvantaged with increased social isolation and reduced opportunities for employment, recreational and social activities.
Transport for NSW (TfNSW)	The statutory authority of the New South Wales Government, responsible for managing transport services in New South Wales.
Transport hub	Typically a public transport interchange, major bus stop or major train station. In terms of freight, typically a freight rail yard, intermodal terminal, seaport or truck terminal. Major airports are also considered transport hubs.
Transport Taxi Subsidy Scheme (TTSS)	Support for NSW residents who are unable to use public transport because of a disability.

Term	Definition
Trauma	Physical or mental injuries which require medical attention.
Travel Choices	A Transport for NSW behavioural change initiative to help manage demand on the transport network in response to capacity constraints or disruption. It involves helping individuals and organisations prepare for and adapt to changes on the transport network, underpinned by the 4 Rs: Remode, Retime, Reroute and Reduce.
Turn-up-and-go	Services with frequency equal to or under 5 minutes, requiring little to no travel planning.
Urban Renewal	A planned approach to the improvement and rehabilitation of city areas with new infrastructure, improved services and renovation or reconstruction of housing and public works.
Visionary initiatives (20+ years)	Longer term initiatives that may be investigated within the next 10 years, but on preliminary evidence are unlikely to require implementation within 20 years. Initiatives planned for investigation in the 20+ years as the funding or benefits may be too uncertain at this stage. Initiatives proposed for investigation are unconstrained by affordability and will be subject to strategic business cases that consider a range of possible solutions.
Western Parkland City	The metropolis of three cities includes the emerging Western Parkland City focused on the proposed Western Sydney Airport. The Western Parkland City will encompass the West and South West Districts and include the strategic centres of Penrith, Liverpool, Campbelltown-Macarthur and Blacktown (also associated with Central River City).
Western Sydney Airport (WSA)	The designated name for the second Sydney airport, located within the suburb of Badgerys Creek.
Whole-of-government	Working in partnership with all government stakeholders including the different state government agencies and local government councils.

Draft Road Safety Plan 2021

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Executive Summary

Introduction

Now that we are half way through implementation of the NSW Road Safety Strategy 2012-2021 implementation, this draft Road Safety Plan 2021 has been developed to set new road safety priorities. These priorities will help NSW work toward the State Priority target of a 30 per cent reduction in road fatalities by 2021. The Plan:

- Uses national and international evidence to prioritise high-benefit road safety initiatives based on the trauma profile.
- Supports the longer term road safety 'Towards Zero' vision for NSW which underpins the Future Transport Strategy priority area for safety.

Between December 2016 and June 2017 over 20,000 people were engaged in the development of the draft Road Safety Plan 2021, commencing with the NSW Government's Road Safety Advisory Council, around 2,800 people who completed an online survey, and more than 600 road safety practitioners and community members who attended workshops and forums across the State.

Initiatives under investigation in this plan align to the Future Transport directions and vision of zero trauma for all transport customers and road users. This will assist with embedding safety and the Safe System principles across Future Transport.

The issue

Last year 380 people were killed and over 12,000 seriously injured using NSW roads. While two thirds of fatalities occur on country roads, two thirds of serious injuries occur on metropolitan roads. Road trauma costs the community over \$7 billion each and every year.

The challenge for country roads include higher speeds, longer distances and infrastructure issues. Metropolitan roads have higher vehicle volumes, more vulnerable road users and greater number of conflict points such as intersections.

Priority areas for action include reducing deaths on country roads, and serious injuries in metropolitan areas, as well as safer road design, addressing road user behaviour and increasing safety of the vehicle fleet.

Safe system

The Road Safety Plan 2021 reflects the internationally proven Safe System approach, which recognises human vulnerability in the event of a road crash.

Safe roads

The NSW Government is providing safer roads, including continued implementation of the Safer Roads Program – with \$713 million committed investment between 2014/15 and 2022/23.

Priority areas and initiatives under investigation will support a safer network, safer country roads, and liveable urban streets and movement corridors.

Safe people

We are taking a whole of life approach to road safety education that supports safe road use - from early childhood education to first becoming licensed to choosing a child restraint and even retiring from driving.

This includes ongoing comprehensive road safety education in schools, road safety education campaigns for the whole community and providing young people with access to the Safer Drivers Course.

Our regularly reviewed penalty frameworks and the Enhanced Enforcement Program delivered in partnership with the NSW Police further ensures safe and compliant road use.

Priority areas and initiatives under investigation will ensure road users are informed and motivated to behave in a safe way, and build strong community and sector partnerships.

Safe vehicles

We are also facilitating uptake of safer vehicles, including support for the Australasian New Car Assessment Program (ANCAP), support for truck and bus safety features and standards, and innovation such as connected and automated vehicles.

Priority areas and initiatives under investigation will develop and promote vehicle and other technology to reduce crash risks and trauma.

Development of the draft Road Safety Plan 2021

Our road safety vision

Vision

The Road Safety Plan 2021 will set new priorities and help NSW work towards the State Priority target of a 30 per cent reduction in road fatalities by 2021, and the longer-term aspirational goal to move Towards Zero as part of Future Transport.

2021

Reduce the number of road fatalities by at least 30 per cent from 2008-2010 levels by 2021. This is our State Priority target.

2026

New road safety targets will be set every 10 years to continue to move 'Towards Zero' trauma on our roads.

2056

By 2056, NSW will have a transport network with zero trauma, including road based transport where there are no fatalities or serious injuries.

Strategic context for the draft Road Safety Plan 2021

NSW Road Safety Strategy 2012-2021

The NSW Road Safety Strategy 2012-2021 (the Strategy) established:

- Directions for road safety activities in NSW for the 10 years to 2021
- The State Priority target to reduce the number of road fatalities by at least 30% by 2021.

Through this Strategy, significant reductions in NSW fatalities have been achieved, with the 2014 road toll of 307 representing the lowest number of fatalities since 1923. The fatality rate in 2014 was 4.1 per 100,000, the lowest since records began in 1908.

However, in 2015 and 2016, there were successive increases in the road toll and this higher level of trauma has continued so far in 2017.

The Road Safety Plan 2021

Now that we are half way through the Strategy's implementation, this draft Road Safety Plan 2021 has been developed to set new road safety priorities to help NSW work toward the State Priority target. The Plan:

- Uses national and international evidence to prioritise high-benefit road safety initiatives based on the trauma profile
- Supports the longer term road safety 'Towards Zero' vision for NSW which underpins the Future Transport Strategy priority area for safety.

Future Transport 2056

Safety is a key part of creating a sustainable transport network for the prosperity of all people, and NSW has set an aspirational target of zero trauma on the transport system by 2056 under the draft Future Transport Strategy, which starts with a 30 per cent reduction in road deaths by 2021.

Close cooperation between transport partners who play a key role in the safety of the road system is important for working toward the Future Transport vision of zero trauma. Transforming the road system to ultimately be as safe as rail and air travel will involve commitment and action by road designers, vehicle manufacturers, enforcement agencies, freight industry leaders, community leaders, transport providers, and road users working together towards this common goal.

Developing the draft Road Safety Plan 2021



Image caption: Safe System diagram

The development of this draft Road Safety Plan 2021 has been based on:

- Detailed review of current road trauma statistics and evidence in NSW.
- Review of best practice to identify initiatives to achieve a 30 per cent reduction in deaths by 2021 and Towards Zero in the long term.
- Consultation with the NSW Government's Road Safety Advisory Council.
- Consultation with expert researchers and practitioners.
- Community consultations and consultations with key stakeholder and practitioner groups.

Over 20,000 people have been engaged, with around 4,000 people participating in consultations and more than 16,000 others engaging online* through social media (Facebook, Twitter and LinkedIn) and the Towards Zero email.

**Engagement = number of people who post, click, like, share or comment on post.*

Our road trauma challenge

Road trauma touches many lives in NSW



EVERY 41 MINUTES SOMEONE IS KILLED OR HOSPITALISED BECAUSE OF A CRASH ON NSW ROADS

Image caption: Road trauma in NSW derived from NSW road crash data average 2014-2016p.

Last year 380 people were killed and over 12,000 seriously injured while using our roads in NSW, including drivers, passengers, motorcyclists, cyclists and pedestrians.

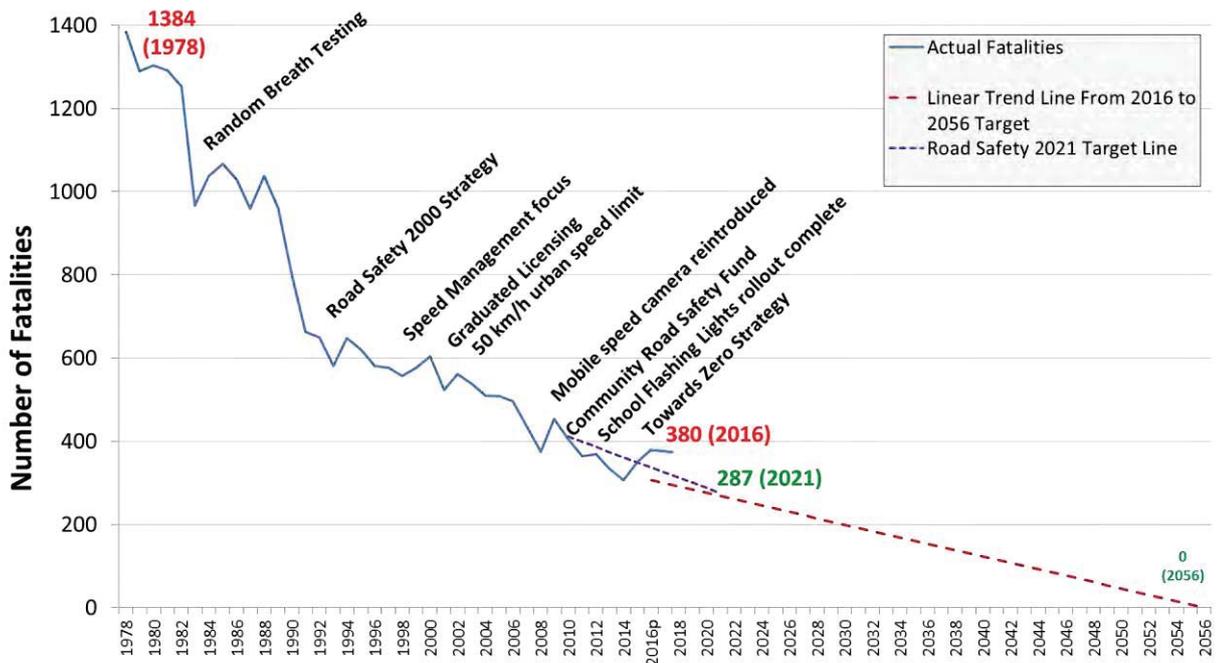
This costs the community **over \$7 billion** each year using the nationally accepted Willingness-to-Pay values which include values for fatalities, serious, moderate, minor and other injuries. *

* Method first derived in NSW by Price Waterhouse Coopers and Hensher Group for Roads and Maritime Services in 2008.

We have made progress addressing trauma

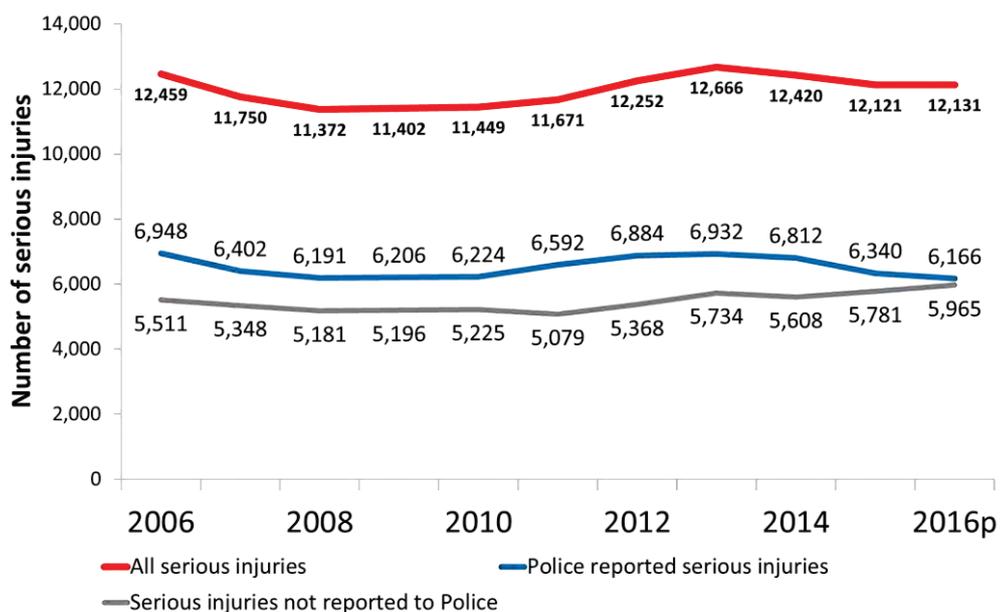
NSW has been successful over the long term in reducing fatalities. In 2014, the road toll was 307, the lowest number since 1923. That's around 1,000 fewer lives lost compared to 1978 when 1,384 people died on NSW roads. However, we have seen successive increases in the road toll in 2015 and 2016, with this level of trauma continuing so far in 2017. Recent increases in fatalities in 2015 and 2016 have meant we are now above our 2021 target. In contrast the number of serious injuries have remained relatively stable.

Figure 1. NSW fatalities – 1978 to 2056



Source: Transport for NSW, Centre for Road Safety

Figure 2. Serious injuries for 12-month periods, NSW



Source: Transport for NSW, Centre for Road Safety

Our metropolitan and country roads have different challenges

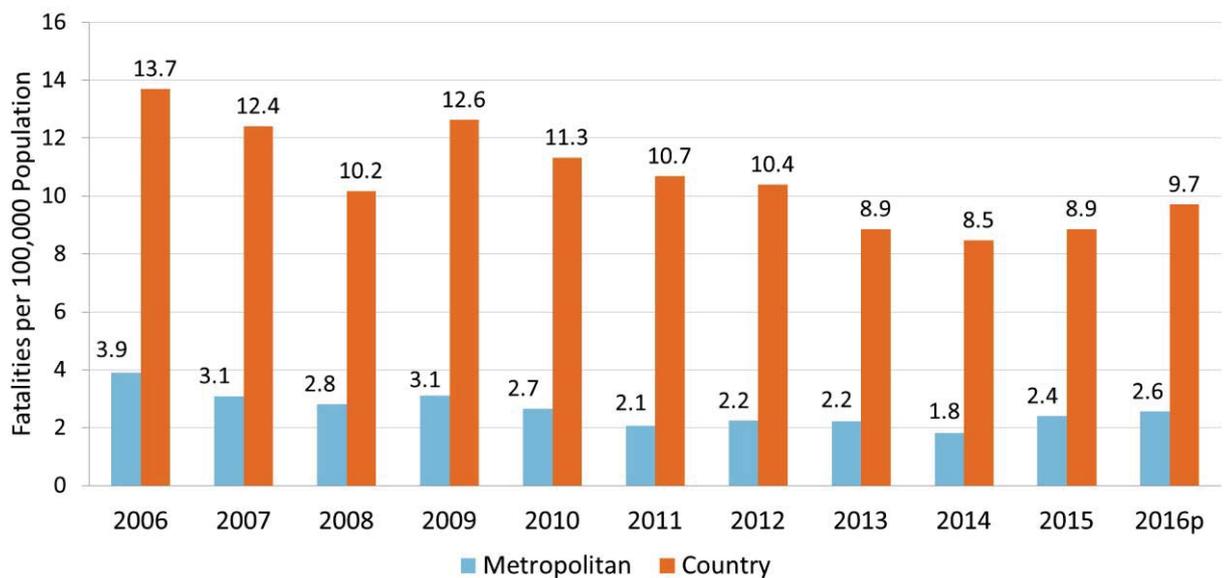
Two thirds of fatalities happen on NSW’s country roads - where the fatality rate is approximately four times higher than on urban roads.

In contrast, almost two out of three serious injuries occur on metro roads.

Higher traffic volume, concentrations of vulnerable road users and conflict points, such as intersections, contribute to the concentration of serious injury crashes and serious injuries in urban places.

Higher speeds and shortcomings in road infrastructure mean that country roads are less forgiving in a crash. Longer distances and less frequent enforcement to ensure safe behaviour, also contribute to the different trauma profile.

Figure 3. Fatalities per 100,000 Population, NSW, 2006 to 2016p, Metropolitan v Country



Source: Transport for NSW, Centre for Road Safety

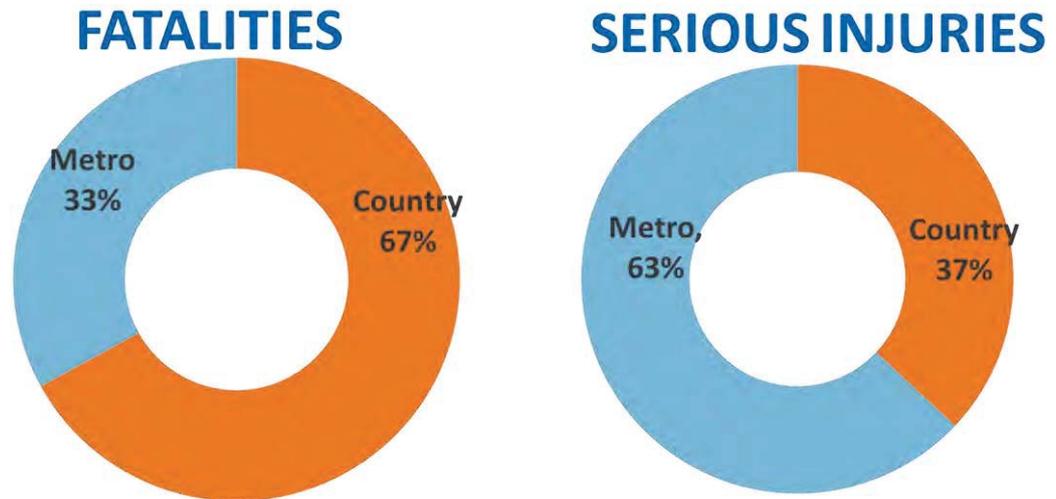


Figure 4. Comparison of fatalities and serious injuries in metro and country areas

Source: Transport for NSW, Centre for Road Safety

How our fatality rate compares to other countries

By adopting the Safe System approach to road safety, countries like the United Kingdom (UK), Sweden, and the Netherlands have significantly reduced their road toll making their road transport systems the safest in the world.

While these countries may vary in size, population and transport options to NSW, we can still learn from their success and adapt proven initiatives to the NSW context.

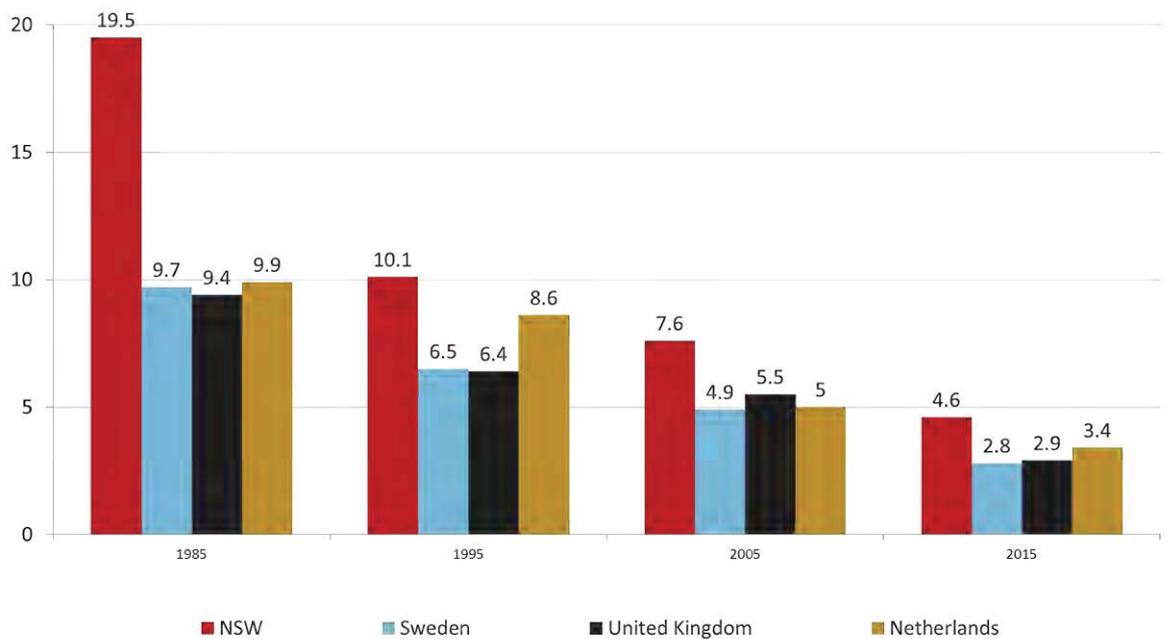
Figure 5. Fatality Rate – International Comparison (Fatalities per 100,000 pop 2016)



Source: Compiled by Transport for NSW using NSW Crash, Bureau of Infrastructure, Transport and Economics (BITRE) and Organisation for Economic Co-operation and Development (OECD) data.

Our fatality rate has moved closer to best performing countries

Figure 6. Fatality rate per 100,000 population – NSW comparison against top three countries



Source: Compiled by Transport for NSW using NSW Crash and Organisation for Economic Co-operation and Development (OECD) data.

Over the last four decades, the NSW fatality rate has moved closer to leading countries – through key initiatives to improve road user behaviour such as random breath testing, improved vehicle safety and safer roads – but more can be done.

We also know other countries have similar disparities in safety between their metro and country roads (see Figure 7) – but their improvements highlight the opportunity to save more lives on country roads in NSW.

Figure 7. Fatality rate comparison - NSW and Sweden (per 100,000 population 2015)

Fatality rate comparison - NSW and Sweden (per 100,000 population 2015)		
	NSW	Sweden
Metro Roads	2.4	0.65
Country Roads	8.9	3.02

Source: Transport for NSW, Centre for Road Safety

The Safe System approach

We know the Safe System approach adopted by leading jurisdictions saves lives. **167 lives would have been saved in 2016 if NSW had the same fatality rate as Sweden or the UK.**

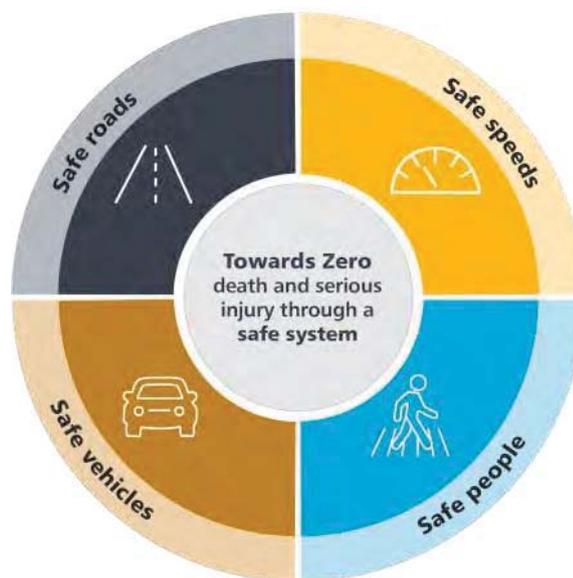


Image caption: Safe System diagram

The **NSW Road Safety Strategy 2012-2021** adopted the internationally proven Safe System approach to road safety initiatives. The approach was first developed through the Netherlands' Sustainable Safety Strategy in the 1990s and Sweden's Vision Zero Strategy in 1997 before being adopted in-principle across Australia in 2003.

This approach is underpinned by the following principles:

- The human body is fragile and not designed to tolerate the impact forces experienced in a road crash.
- People are human and sometimes make mistakes – a simple mistake shouldn't cost anyone their life.
- Roads, roadsides and vehicles need to be designed to minimise crashes and reduce forces if a crash happens.
- Road safety is a shared responsibility – everyone needs to make safe decisions on and around the road to prioritise safety.

Initiatives that create safer roads, speeds, people and vehicles should be implemented together so the road system not only keeps us moving, but safe and protected.

The draft Road Safety Plan 2021 builds on this internationally proven approach to road safety. The draft Road Safety Plan 2021 also considers how the Safe System approach applies within Future Transport's movement and place framework – ie. how we integrate safe roads, people, speeds and vehicles within the environments of motorways, movement corridors, living streets, local streets and places for people.

Key initiatives implemented by leading jurisdictions

Safer roads

- Sweden, Denmark, Germany and the UK have extensively re-engineered two-lane rural roads into narrower three-lane roads separated by a median barrier – where the 'passing lane' alternates directions. This has provided an estimated 45-50% reduction in fatalities and serious injuries in Sweden.*
- In Sweden, 75% of the traffic volume on roads with a speed limited >80km/h are separated with centre median barriers. Road side barriers also prevent run-off road crashes.
- Sweden, Netherlands and the UK have:
 - constructed roundabouts at intersections, instead of traffic lights. Estimated 30-50% reduction in serious injuries and 50-70% reduction in fatalities where implemented (Sweden).**
 - traffic calming measures in urban areas and residential streets, including raised pedestrian crossings.

Safer vehicles

- Sweden, Netherlands and the UK have had progressive improvements in vehicle safety. This has provided an estimated 20% reduction in fatalities (Sweden).***
- Sweden has high uptake of active vehicle safety features such as Electronic Stability Control (ESC) to ensure drivers are less likely to lose control. Estimated 35% reduction in fatalities and serious injuries due to ESC (Sweden).#
- Sweden, France and Germany have established and continue to develop the European New Car Assessment Program (Euro NCAP) for crash testing and safety ratings of vehicles in Europe.
- Sweden and the Netherlands require Government fleets to have the safest vehicles, meaning a flow-on to improve the safety of the overall fleet.

Safer speeds

- Sweden and the Netherlands have:
 - ensured speed zones are matched to the safety levels provided by the design and features of the road, the mix of road users and the reasons people use the road.

- implemented 30km/h speed zones in residential or highly pedestrianised and cycling areas.
- The UK has implemented 20m/h zones (approximately 32km/h) across London and other high pedestrian areas. ##
- In the developing world, speed zones are a key aspect of iRAP – the International Road Assessment Programme – as appropriate speed is a cost effective way to cut trauma when other road features are lacking. In Australia, AusRAP is part of this international approach to holistically assessing and star rating road networks.

Safer people

- Australia and NSW have led the world in improving safety behaviour through effective laws and enforcement, and public education which has shifted unsafe behaviour and social norms over time.
- In the UK, Sweden and Norway there are extensive speed camera operations. Speed cameras are combined with other speed management measures such as speed limit reductions. Estimated 47% reduction in all crashes, and 25% reduction in fatalities (Netherlands).###

* Larsson et al. Flexible barriers systems along high-speed roads: A lifesaving opportunity (2003)

** Elvik, R., Effects on road safety of converting intersections to roundabouts: review of evidence from non-US studies (2003)

***Kooistra et al., SUNflower: a comparative study of the development of road (2002)

Lie, A., et al., The effectiveness of electronic stability control (ESC) in reducing real life crashes and injuries (2006)

Grundy C, et al., 20 mph Zones and Road Safety in London (2008)

Soole, D.W. et al., Effects of average speed enforcement on speed compliance and crashes: A review of the literature (2013)

Collision speeds and human vulnerability

Human biology means that the body can only take so much force in the event of a crash before death becomes a highly likely outcome. As collision speeds increase the likelihood of surviving dramatically decreases.

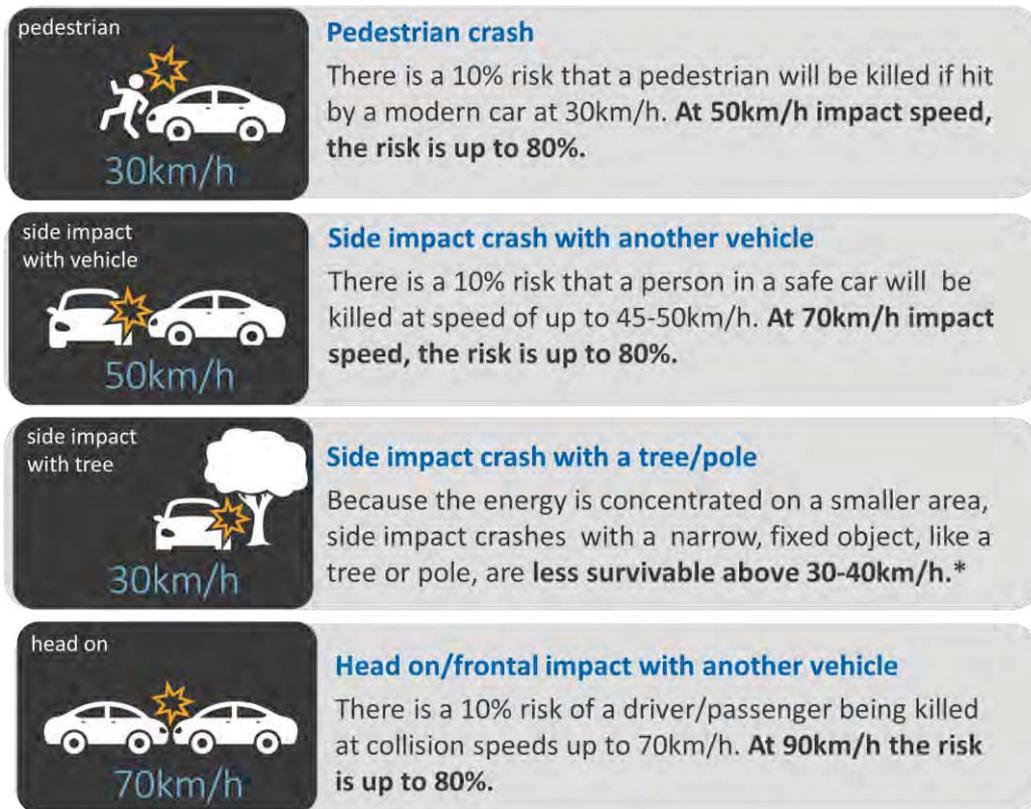


Image caption: Collision speeds and human vulnerability

Source: Austroads Research Report Balance between Harm Reduction and Mobility in Setting Speed Limits: A Feasibility Study (2005)

Commitment to good governance and a strong evidence base



Image caption: Attendees at the Road Safety Plan 2021 - Countermeasure workshop

To support the delivery and success of the Road Safety Plan 2021 we will explore:

- Developing and implementing a Governance framework that includes:

- Robust engagement and reporting in collaboration with partner agencies to ensure delivery and achievement of targets.
- Ongoing consultation with stakeholders from a broad range of industry, road user groups and community organisations, including the NSW Government's Road Safety Advisory Council.
- Further enhancements to data collection and supporting systems to increase our understanding of road trauma and make information available to road safety practitioners, delivery partners and the community.
- Setting road safety performance targets to 2021 for each of the priority areas proposed in the draft Plan.
- A research and innovation program which will focus on priorities, visionary goals and initiatives. The program will include program evaluation, safe system analysis of fatalities, research into connected and emerging vehicle and infrastructure technology, as well as driver distraction and impairment.

Safe Roads



Image caption: Safe Roads – an element of the Safe System approach

We know some roads pose greater risks

Together, non-urban country roads, local residential and neighbourhood streets, and intersections where road users mix, account for up to 75% of all deaths and serious injuries on NSW roads.

Non-urban country road crashes*

54% of fatalities (185 lives)

23% of serious injuries (1,508 people)

Common crashes are run off road or head-on.

Neighbourhood streets

15% of the fatalities (51 lives)

27% of serious injuries (1,711 people)

Key crashes on these roads involve pedestrian or bicyclists, or drivers running off the road.

Crashes at intersections

21% of fatal crashes (67 crashes)

41% of serious injury crashes (2,345 crashes)

Signalised intersections are sites of high traffic volume and risk, where crashes involving pedestrians or turning vehicles are more likely.

What does the community support?

As part of initial consultations on the draft Road Safety Plan 2021 the community believed the following measures were important to improving road safety:

- Safety barrier and audio-tactile line marking
- Better maintenance

- Separation of traffic on high volume, high speed roads
- Safety is standard in all infrastructure projects
- Greater consideration of cyclists/pedestrians in urban areas
- More controlled turning at intersections
- Consideration of safety during road construction
- Appropriate speed settings to match road conditions
- Lower urban speed zones to protect vulnerable road users

Note: Crash data reflects three year average 2014-16p

* Non-urban country roads: Outside the NSW metropolitan area with a speed limit of 80km/h and above

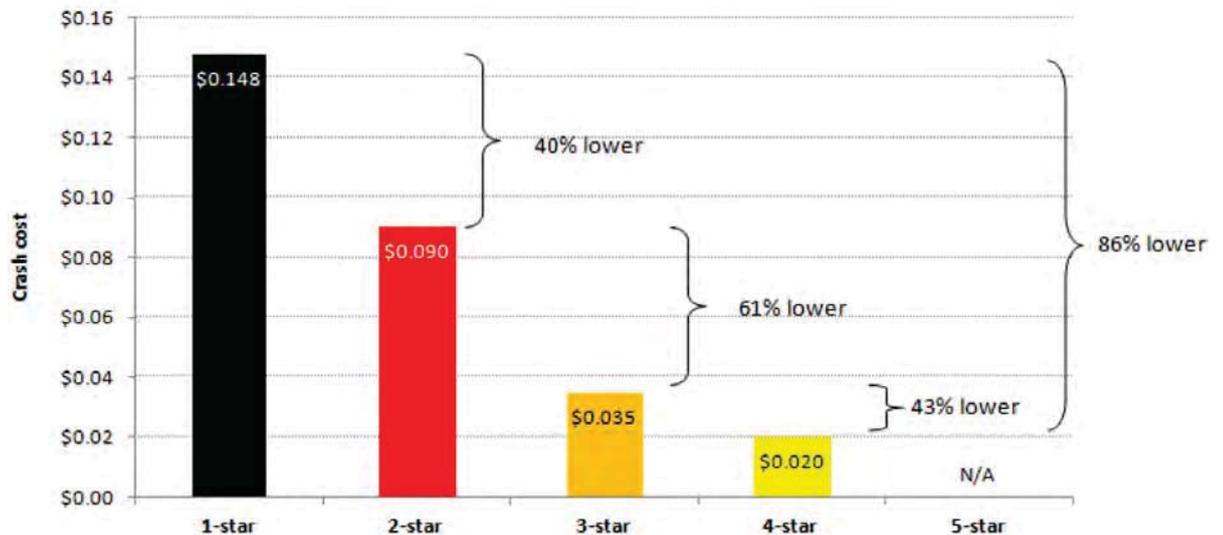


Image caption: An example of a high risk road that lacks safety features to prevent head on and run off road crashes.

Image source: CrashLink database

Safe Roads: What the evidence suggests

Figure 8. iRAP – Fatal and serious injury crash costs per kilometre by star rating



Source: International Road Assessment Programme irap.org

Priority area: A safe network

The way that we plan, develop, design, operate and maintain roads plays a key role in reducing the risk of road trauma. Setting targets for the proportion of all travel completed on the safest modes and routes, and ensuring safety features that reduce crashes are built into developments and will help make roads safe from the start.

Best practice is also to treat risk across the network for safe journeys - rather than focussing primarily on black spots. Star rating road assessment, which looks at the road features and the way it is used to provide a 'star' score, is a consistent and robust way to benchmark how safe roads are and to plan improvements. International Road Assessment Programme (iRAP) analysis highlights that roads with a low star rating have higher fatal and serious injury costs because of higher crash rates. Improving a road star rating from a 2 star to a 3 star reduces fatal and serious injury crash costs by around 60% (see graph).

Priority area: Safe urban places

Our vibrant, 'people' places such as transport interchanges, shopping precincts and the streets where we live need design and infrastructure that supports safe driving, walking and riding. This is particularly true of community hubs and places along new transport corridors such as the Sydney Metro West, which will generate pedestrian traffic.

In NSW, 40km/h high pedestrian area speed zones have 38% fewer crashes that result in death or injury, and are strongly supported by the community.* Internationally, speed zones consistent with survivability for vulnerable road users (30km/h) in highly trafficked pedestrian areas also show promise.

Across urban NSW, intersection safety can be addressed with measures that calm and control traffic such as controlled right arrow signals that reduce turning type crashes by up to 80%.** Exclusive and advanced crossing for pedestrians at high

traffic locations can protect vulnerable users, and roundabouts reduce casualty crashes by 70-80%, as they reduce speed and reduce the potential for more dangerous T-bone type crashes.*** Elevated platforms are emerging as a feature that can be installed in a wider range of urban situations to reduce crashes at high risk intersections.

*Martin Small Consulting for Transport for NSW (TfNSW) NSW Centre for Road Safety – Evaluation of 40km/h speed limits (2017)

**TfNSW Centre for Road Safety - Safer Roads Program - Review of Crash Reduction Factors (2015)

***Bureau of Infrastructure, Transport and Regional Economics (BITRE) Evaluation of the National Blackspot Program Volume 1 (2012)

Safe Roads: What the evidence suggests

Priority area: Safe country roads

Each year, around 230 lives are lost on country roads which can lack safety features that protect road users in the event of a crash.

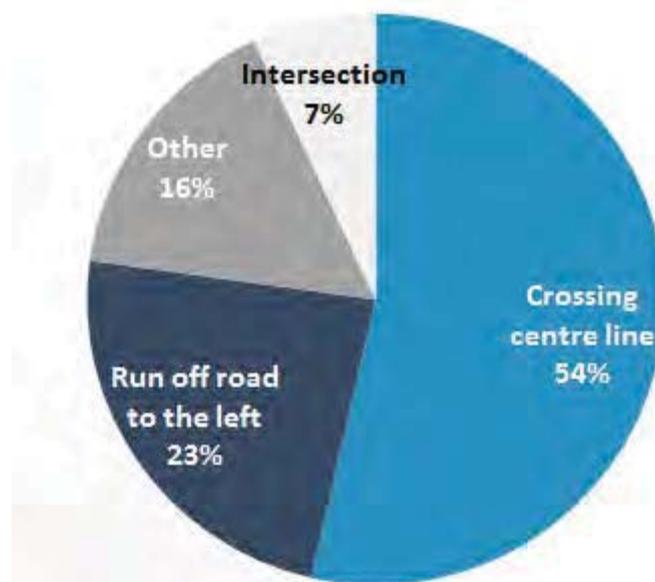
Of these, around 135 (58%) die on country roads that are key movement corridors for people and goods.* In almost 8 out of 10 of these fatalities (see Figure 9.), the vehicle either crossed the centre line or ran off the road to the left.

Proven road safety infrastructure, such as wire rope barriers separating opposing directions of traffic and protecting vehicles from roadside hazards can reduce crashes by up to 85%.**

Simple and low cost tactile treatments (eg. rumble strips) and wide-centre lines can also reduce key dangerous crash types by around 25-35% - delivering a very strong return on investment.**

In Sweden, road safety benefits on country roads have been achieved through safer, '2+1' design on country movement corridors (see image on page 27), where barriers are installed in the middle and side of the road, and overtaking space is provided. This delivers safety and movement benefits like a dual carriageway – but generally at a lower cost – meaning that more could be delivered for our investment.

Figure 9. Fatalities on country roads (100km/h or above), 2014-16*



Source: Transport for NSW, Centre for Road Safety

*Country roads where the speed limit was 100km/hr or above

**TfNSW Centre for Road Safety - Safer Roads Program - Review of Crash Reduction Factors (2015)

Safe roads: Committed initiatives

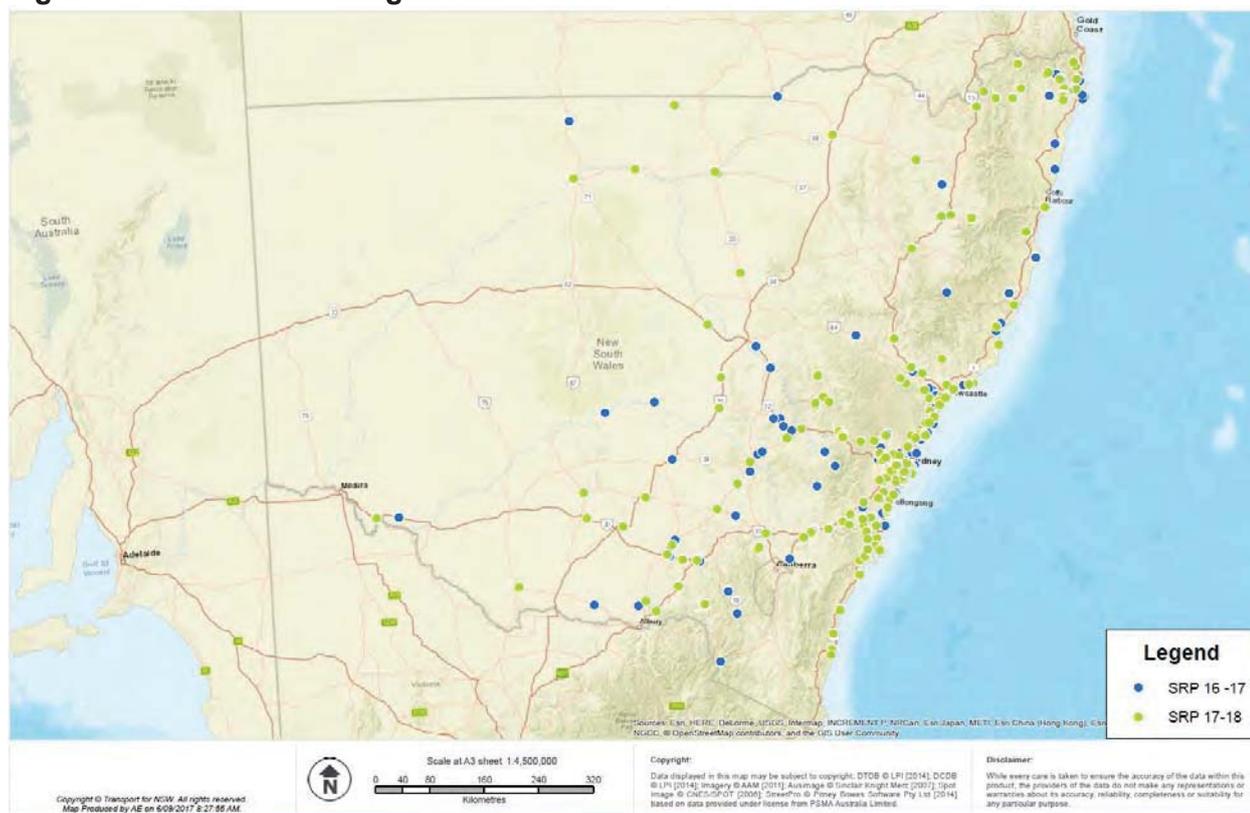
Key achievements since 2012:

- Developed an expanded Safer Roads Program, targeting high risk locations for road safety infrastructure and delivered over \$195 million in more than 500 projects since 2014/15.
- Completed the rollout of flashing lights to every school in NSW – totalling over 3,000 schools.
- Completed a trial and developed policy for the use of pedestrian countdown timers on NSW roads, introduced at over 30 locations.
- Established and expanded the 40km/h zone in the Sydney CBD to improve pedestrian safety, as over 90 per cent of daily trips in the CBD are made on foot.
- Expanded the red-light speed camera program to an additional 80 intersections to reduce red-light running, speeding and pedestrian crashes as there is a 30 per cent reduction in the number of fatal and serious injury crashes at red-light speed camera locations.

Building on what has been delivered, we will continue to:

- Deliver the Safer Roads Program, including \$70 million in 2017/18 to deliver over 170 projects, with \$713 million committed investment between 2014/15 and 2022/23.
- Deliver the pedestrian protection program ('Green on Green' removal) program at over 500 signalised intersections, with over 300 sites already completed.
- Review speed zones across the network to ensure greater consistency, matched to the road conditions.
- Invest in the Level Crossing Improvement Program and public education
- Contribute to the safe design of transport projects, including light rail, through safety reviews and assessment of design.
- Trial and research the latest infrastructure applicability, such as new barrier, signage and connected infrastructure technology, in NSW conditions.

Figure 10. Safer Roads Program 16/17 and 17/18



Source: Transport for NSW, Centre for Road Safety

Safe Roads: New initiatives under investigation

Priority area: A safe network

- Investigate a target for achieving 4 and 5 star safety levels on high volume roads.
- Investigate options to further design safety outcomes into the earliest phase of planning and also during the construction of:
 - road upgrades and projects
 - brownfield and greenfield development – including transport interchange upgrades and development around pedestrian and cycling generating locations.
- Consider enhancing road design and corridor strategy requirements so core safety features are required for different road types (including Smart Motorways) based on:
 - the purpose and use of the road
 - star rating of the road
 - the vehicle mix, including the needs of connected and automated vehicles.
- Investigate options to ensure low cost safety measures that upgrade the safety of a road (such as better line-marking, wide median strips, audio tactile centre and edge-lines or rumble strips) are delivered systematically through maintenance programs to cost-effectively increase the amount of the network with these features over time.

- Test and implement technology to report damage to road safety infrastructure and improve maintenance (for example, where wire rope is hit and damaged). Options may include sensors, community reporting or automated technology.
- Consider the potential to use and promote emerging international safety systems that help road managers and other organisations take a more systematic, standards based approach to road safety (ISO Standard 39001 Road Traffic Safety Management Systems).
- Investigate innovative ways to increase education and training on Safe System and road safety requirements for state and local road authorities who are responsible for day-to-day management and maintenance of roads.

Safe roads: New initiatives under investigation

Priority area: Safe country roads

- Investigate options to increase investment in and accelerate the rollout of safety infrastructure (including barriers and tactile/rumble strips) that can prevent and reduce the severity of run-off road and head-on crashes.
- Assess high risk curves and investigate options to increase investment in reducing the risk of crashes.
- Assess opportunities to increase the proportion of roads where vehicles are protected from oncoming traffic or roadside hazards through design or with barriers at the side and in the middle of the road, such as by further integrating safety into corridor and major projects planning.
- Assess options for ensuring travel speeds are appropriate and suitable to the road conditions on high risk routes with limited infrastructure and barriers to protect vehicles from hazards.



Image caption: Example of a 2+1 road

Source: Swedish Transport Administration Road Safety: Vision Zero on the Move

Priority area: Safe urban places

- Explore options for expanding 40km/h to more high pedestrian activity areas and to increase safety in local neighbourhood streets, and trial 30km/h in timed, high volume or high risk locations.
- Investigate increased investment in a Pedestrian Safe System program to target high-risk pedestrian hot spots and deliver safety infrastructure such as pedestrian crossings, refuges and traffic calming.
- Explore options to accelerate treatment of high risk intersections with proven safety infrastructure and technology, including:
 - traffic signal changes to ensure safer and more controlled turning
 - signal changes, technology and infrastructure to support enhanced pedestrian protection and priority
 - expanded use of raised intersection or advanced profile treatments and greater use of innovative roundabouts.

- Maximise safety integration in bicycle network programs to facilitate safer movement, provide separation from other traffic where appropriate and manage vehicle speeds.



Image caption: Busy pedestrians

Safe People

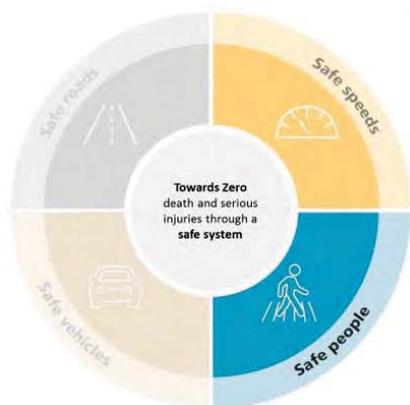


Image caption: Safe People – an element of the

Safe System approach

We know some people are more vulnerable

People who walk, ride a bicycle or a motorcycle are vulnerable when they are involved in a crash as they do not have the protection of a car to absorb the crash forces.

Some people lack the driving experience of others and are therefore more at risk of being involved in a crash. Young children are at risk because of their not yet developed sense of harm and their physical size and stature. Older people can become more vulnerable in a crash as they age.

Motorcycling

19% of fatalities (64 lives)

19% of serious injuries (1,222 people)

Bicycle riding

2% of fatalities (8 lives)

16% of all serious injuries (1,979 people who were admitted to hospital)*

Walking

17% of fatalities (58 lives)

11% of serious injuries (695 people)

Younger drivers are involved in

26% of fatal crashes (84 fatal crashes)

27% of serious injury crashes (1,551 serious injury crashes)

*Includes all serious injuries i.e. those admitted to hospital who had a police crash report plus those who did not a report crash to police.

Older drivers (over 65) are involved in

23% of fatal crashes (73 fatal crashes) 17% of serious injuries (971 serious injury crashes)

What does the community support?

As part of initial consultations on the draft Road Safety Plan 2021, the community believed the following measures were important to improving road safety:

- Road safety education for children and young people
- Existing education approach and driver licensing framework for young people
- Improving information for older drivers
- Protective clothing for motorcycle riders
- Partnerships with Aboriginal communities.

We know some people take more risks

Some people continue to drive and behave in a way that increases their risk of a crash.

Driving at unsafe speeds, drinking and driving, taking drugs and driving, or being tired or distracted all increase crash risk.

Speeding is involved in

42% of the fatalities (144 lives)

23% of serious injuries (1,509 people)

Drug driving – illicit drugs were present in

19% of fatalities (66 lives)

Drink driving

15% of fatalities (51 lives)

Tired drivers are involved in

18% of fatalities (63 lives)

12% of serious injuries (746 people)

Distracted driving

There is limited crash data available – but clear risks.

Seat belt wearing

12% of fatalities (43 lives)

3% of serious injuries (163 people)

What does the community support?

As part of initial consultations on the draft Road Safety Plan 2021 the community believed the following measures were important to improving road safety:

- Reducing risky behaviour and enforcement of the road rules
- Enforcement of drink and drug driving and investigating lower blood alcohol limits
- Freight industry continuing to advocate high industry standards
- Assisting drivers to comply with speed limits using smart vehicle technology underpins safety
- Speed enforcement by NSW Police and cameras

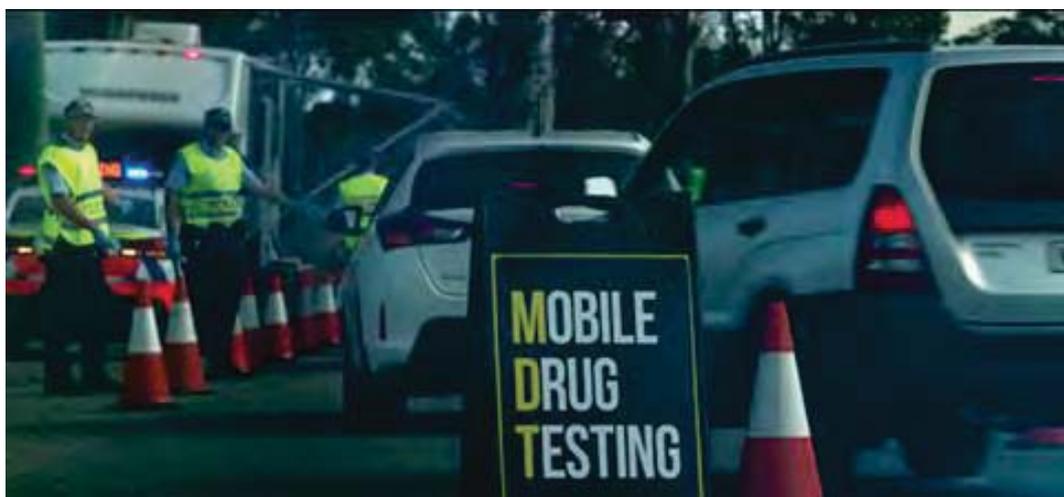


Image caption: NSW Police roadside mobile drug testing

What the evidence suggests

Enforcement and penalties

Safe road user behaviour is achieved when clear, well-understood and appropriate laws and penalties are paired with enforcement. Effective sanctions include licensing sanctions for those who take risks and do the wrong thing, including repeat, high risk offenders.

Internationally, research suggests lower legal alcohol limits have contributed to overall reductions in fatal crashes by 10%.* Alcohol interlock devices have also been shown to reduce drink driving reoffending by over 60%** and can influence both first time and repeat offenders.

Automated enforcement, when the right type of camera is used in the right location, is effective - with red-light speed cameras in NSW associated with a 42% reduction in deaths and 31% reduction in serious injuries. ***

Licensing framework

A supportive, whole-of-life approach to licensing, including an enhanced Graduated Licensing Scheme (GLS) that protects people while they are learning is critical to improving the safety of young drivers, and has been consistently supported by research. Since the introduction of the GLS on 1 July 2000, there has been a 50%

reduction in the number of young drivers killed on NSW roads. Options that assist older road users to understand and manage risks while staying mobile and active, are also vital.

Education and cultural shifts

Individuals, organisations, key sectors such as education, industry employers and government can actively engage and collaborate, to normalise and promote shared responsibility for road safety.

This can accelerate innovative solutions to the road safety challenge, and build capacity in high need groups and communities so that people are protected across their whole life, from early childhood and adolescence through to working and family life and as needs change with ageing. Engagement results for the Towards Zero campaign highlight the importance of promoting a shared responsibility for road safety, with the campaign recognised by the majority of NSW drivers, and 71% agreeing that it makes them think that ‘zero’ is the only acceptable number of road deaths.

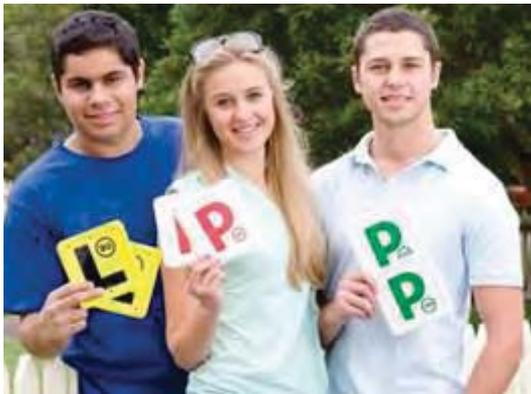


Image caption: Learner, Provisional P1 and Provisional P2 licence holders



Image caption: Provisional motorcycle rider

* Norstrom T. and Laurell H., Effects of the lowering of the legal BAC limit in Sweden (1997)

**US Department of Transportation, National Highway Traffic Safety Administration, Evaluation of the New Mexico Ignition Interlock Program (2010)

*** TfNSW Centre for Road Safety, Speed Camera Programs: 2016 Annual Review (2016)

Committed initiatives

Key achievements since 2012:

- Introduced the Mandatory Alcohol Interlock Program for serious and repeat drink drivers, with over 4,000 enrolled to date.
- Introduced and delivered the NSW Speed Camera Strategy 2012, which is an overarching evidence based speed camera strategy for NSW. This included expansion of red light speed and mobile speed camera programs, and annual speed camera reviews which have consistently shown the benefits of cameras, for example a 92% drop in fatalities at fixed camera locations.
- Delivered new education campaigns targeting key road safety behavioural issues, including driving tired, drink and drug driving, mobile phone distraction, cyclist safety, motorcycle safety, and Towards Zero.
- On the 19 July launched Safety Town, the first online road safety education website for primary students – (www.safetytown.com.au). Since then as at 19 October 2017, Safety Town had 720,041 page views and 55,432 users.
- Designed and implemented the Safer Drivers Course for young drivers in July 2013, with over 77,000 course completions to date.
- Developed and delivered the NSW Breakdown Safety Strategy.
- Trialled and implemented motorcycle lane filtering, and the bicycle rider compliance and minimum passing distance reforms.
- Finalised the Older Driver Taskforce and On the Road 65+ communications package for older road users.

Building on what has been delivered, we will continue to:

- Develop road safety education campaigns targeting key behavioural areas and road user groups.
- Provide mandatory road safety education for every child in NSW.
- Provide young people with access to the Safer Drivers Course and Driver Licensing Access Program.
- Deliver the Enhanced Enforcement Program partnership with the NSW Police Force, including continuing the expanded Mobile Drug Testing program.
- Support safety around schools, including school zones, flashing lights and pedestrian infrastructure.
- Enhance road safety data, including Aboriginal road trauma data, to better inform safety measures.
- Refine road rules and regulations to ensure penalties for unsafe behaviours reflect road safety risks.
- Support the Local Government Road Safety Program – to deliver road safety in local communities across the state.
- Comprehensive research and data program to evaluate, monitor and inform new directions and current programs.

- Offer Community Road Safety Grants, and build on the 37 local projects delivered in 2015/16 and 2016/17 (total value of over \$480,000).
- Implement and review the enhanced Graduated Licensing Scheme.



Image caption: Road safety initiatives for NSW road users

New initiatives under investigation

Priority area: Informed and motivated road users

- Investigate developing an enhanced police enforcement strategy in partnership with NSW Police that reflects trauma trends, priorities in metropolitan and country areas, and community concern about the need for safe heavy vehicle movements.
- Explore a package of reform to penalties and processes for certain drink and drug driving offences, supported by public education, to deter impaired driving, including:
 - Options to manage lower range and first time offences through penalty notices to deliver swift, certain and targeted penalties and ensure court resources are directed to the most serious offenders.
 - Increase the offenders required to install interlock devices and attend proven behaviour change programs, in co-ordination with other penalties such as vehicle sanctions.
- Review the NSW Speed Camera Strategy 2012 and options to increase safety benefits and reflect new technology and research.
- Review the motorcycle Graduated Licensing Scheme (GLS) and investigate options to improve policy and programs.
- Review and consider options to modernise the NSW Road Rules and safety legislation. For example, to better address distraction, driving tired and emerging technology, and supported by education to increase compliance.

- Investigate options to deliver integrated communications about licensing, safer transport and health factors for older road users, their family/carers and the medical network.
- Scope delivery of new platforms and enhanced road safety content in driver testing, alongside new interactive education for young drivers and their parents/carers.
- Explore expanding driver licensing access and mentoring programs to improve licensing access for disadvantaged drivers, including in Aboriginal communities.



Image caption: Adam Goodes discussing road safety at the Adam Goodes Talent Camp, sponsored by the NSW Government

Priority area: Community and sector partnerships

- Consider enhancing communications, initiatives and tools such as Safe Driving Guides and Policy to enable employers and industry to build safer road user culture and requirements, including:
 - targeting high risk groups such as shift workers who have fatigue management challenges
 - encouraging safe journey planning and measures to reduce distraction
 - ensuring use of protective clothing and helmet use by bicycle riders and motorcyclists, and encourage safer walking behaviour.
- Develop and implement an Aboriginal road safety community engagement and capacity building program to support road safety in Aboriginal communities
- Investigate the needs of culturally and linguistically diverse (CALD) road users and new residents
- Explore opportunities to increase proactive use of alcohol interlocks in fleet vehicles, including partnership with industry.
- Consider a Towards Zero Town partnership with local government, institutions and business to improve safety locally across NSW, and explore how community grants can further support grassroots action.
- Explore re-developing childhood and high school road safety education resources to embrace technology and emerging education approaches.

- Investigate a new partnership framework for engaging with and enhancing outcomes with road safety advocates and community and commercial road safety education providers.

Safe Vehicles

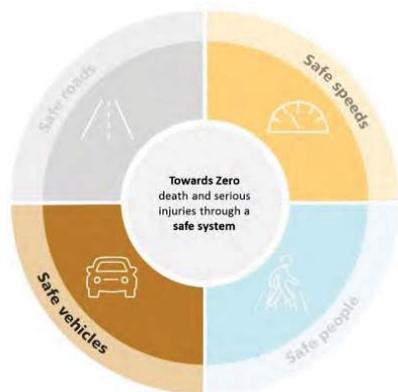
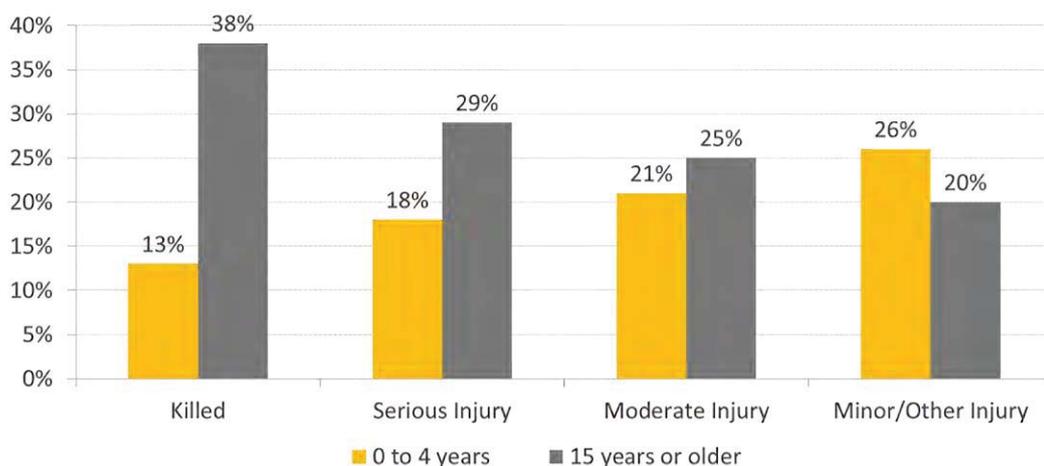


Image caption: Safe Vehicles – an element of the Safe System approach

We know some vehicles lack the latest safety features

Most fatalities and serious injuries are car drivers or passengers. The design of a car can save lives and prevent crashes, but only one third of the current light vehicle fleet on our roads is rated with a 5 Star safety rating (at end 2015).

Figure 11. Age of car, by occupant casualty level*



*3 year average: 2013-2015

Source: Transport for NSW, Centre for Road Safety

Newer vehicles are more likely to have extra safety features, such as auto-emergency braking, side curtain airbags and lane departure warnings. Of those killed in cars on our roads:

- 38% were in cars 15 years old or older – despite these vehicles making up only 16% of registered vehicles.
- 13% in cars less than 5 years old.

Light trucks typically have fewer safety features than passenger vehicles and we have seen an increase in fatal crash involvement, with light trucks involved in 26% of fatalities on NSW roads in 2016.

In heavy vehicles, technology such as side underrun protection which stops pedestrians, bicyclists and motorcycles from being run over by the rear wheels are not currently required but leaders in industry have installed to improve safety.

What the evidence suggests

Life-saving vehicle technology

Newer technologies, including lane keep assist, auto emergency braking and speed assist in passenger and commercial vehicles will save lives and reduce lifelong injury.

Auto-emergency braking has been found to reduce rear-end crashes by 38% * and on motorcycles, Anti-Lock Braking Systems (ABS) can cut fatal and serious injury crashes by 39%.**

Initiatives of business and government can accelerate the typically slow integration of safety technology in both the light and heavy vehicle fleet, including by setting policies that prioritise the safest vehicles.

Crash avoidance and protective features on heavy vehicles, including advanced braking systems, blind-spot monitoring, underrun, and monitoring systems offer industry safer transport of goods and safer workplaces.***

Targeted information on safer vehicles and technology also drives consumer demand, and in turn can increase availability and fast track development of safety features in ways that regulation alone cannot. It has been estimated that for older drivers, influencing vehicle decisions so a safer choice is made could reduce crashes by at least 19%.****

What does the community support?

As part of initial consultations on the draft Road Safety Plan 2021, the community believed the following measures were important to improving road safety:

- Technology that prevents driver distraction
- Newer vehicles important for at-risk groups
- Seatbelt reminder technology
- Auto Emergency Braking
- Fatigue alarms devices
- Underrun barriers on trucks
- Assisting drivers to comply with safe speeds using smart vehicle technology underpins safety

There were some concerns about over-reliance on technology and possible loss of driving skills.

* Fildes et al. Effectiveness of emergency autonomous braking on real-world rear end crashes (2015)

** Fildes et al. Evaluation of the Effectiveness of Anti-Lock Braking Systems on motorcycle safety in Australia (2015)

*** TfNSW Centre for Road Safety, Safety technologies for Heavy Vehicles and Combinations (June 2017)

**** Budd et al., The potential crash and injury reduction benefits of safer vehicle choices for older drivers in Australia and New Zealand (2012)

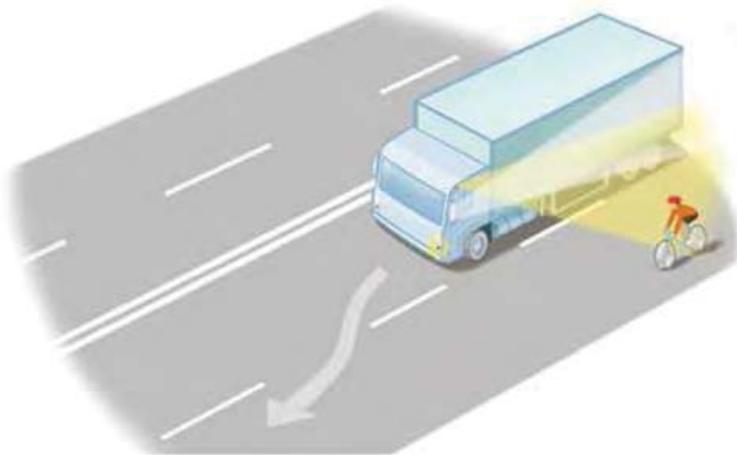


Image caption: Blind spot elimination / enhanced daytime vision system

Committed initiatives

Key achievements since 2012:

- Published the annual Buyer's Guide to Used Car Safety Ratings to help consumers make informed decisions when purchasing used cars.
- Released the 'Speed Adviser' smart phone app, which provides speed zone information and audible warnings to drivers if they are speeding.
- Made changes so that NSW motorcycle helmets with Global Standard (UNECE 22.05) are able to be sold and legally worn.
- Amended the high performance vehicle restrictions in the Graduated Licensing Scheme to allow P-plate drivers to drive vehicles with enhanced safety features.
- Provided information to parents and carers of young children via the Child Restraints Evaluation Program to ensure consumers have access to the latest safety information when buying a child restraint.
- Undertook helmet testing under the Consumer Rating and Assessment of Safety Helmets (CRASH) program to provide independent and consistent information on the levels of protection provided by motorcycle helmets in a crash, as well as their comfort levels.

Building on this, we will continue to:

- Support and promote ANCAP and Used Car Safety Ratings.
- Work with the heavy vehicle industry to ensure they have access to the latest safety information and technology.

- Continue the Child Restraints Evaluation Program that tests child seats and provides safety information for consumers.
- Support the Australian Naturalistic Driving Study, Cooperative Intelligent Transport Initiative and FleetCat initiatives which enable us to build research understanding and trial fatigue, distraction monitoring and smarter collision avoidance technologies.
- Drive positive road safety outcomes in national vehicle standards groups and support the implementation of truck and bus safety features and standards.
- Support helmet safety through motorcycle and bicycle helmet safety research and testing.
- Crashlab testing to determine roadworthiness and safety of vehicles.
- Develop post crash response initiatives including automated crash notification and motorcycle route emergency phones.

New initiatives under investigation

Priority area: Proven vehicle technology for a safer fleet

- Explore opportunities to review Government fleet vehicle policy and increase the proportion of the fleet with the latest safety technologies and options to also maximise the safety of Government contractor vehicles.
- Investigate increasing safer vehicle uptake, particularly by younger and older road users and fleet managers, through an integrated public communications program and potential incentives.
- Partner with the heavy vehicle industry to:
 - Increase safety features in the fleet (such as enhanced underrun and blind spot monitoring) and
 - Investigate ways to better integrate fleet safety into heavy vehicle access policy.
- Explore ways to promote and, if feasible, incentivise uptake of motorcycles with lifesaving anti-lock braking systems (ABS).
- Continue to explore ways to increase use of motorcyclist protective clothing.
- Explore options to ensure the highest safety standards in connected and automated vehicle trials and early uptake, and supporting road and regulatory conditions.
- Consider opportunities to further support the adoption of new technologies into vehicle standards, including for commercial and heavy vehicles, and to support E-alert systems when crashes happen.



Image caption: ANCAP vehicle testing

What does a safe system look like beyond 2021?

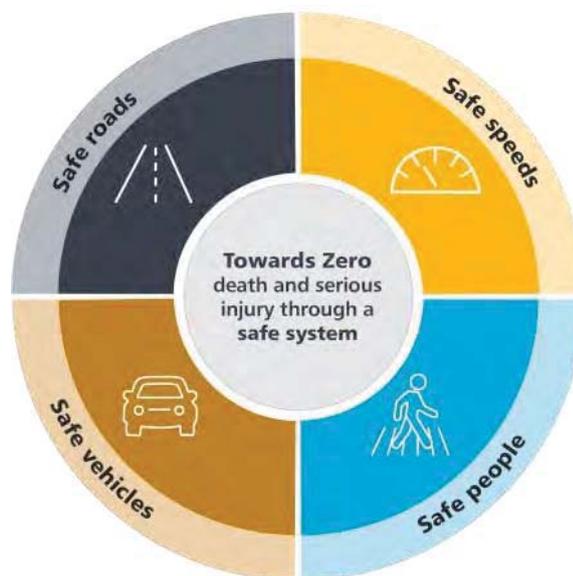


Image caption: Safe System diagram

Safe roads

Motorways are our safest and most efficient movement corridors and school zones are our safest places for people.

Like school zones, we will apply the safe system standards at the heart of design of places to improve urban places and vibrant streets. Like motorways, we improve separation between vehicles and high safety standards to movement corridors between towns and urban centres.

Safe vehicles

We will move towards half of vehicles on our roads being 5-star. We will continue to prepare for fully connected and automated vehicles by promoting the uptake of critical safety technologies such as autonomous emergency braking, adaptive cruise control and lane assist that prevent crashes. We will ensure our vehicle technology eliminates unsafe behaviours like drink driving and distraction and minimise crash forces for all road users if a crash cannot be avoided.

Safe speeds

We will continue to transform the road network to match safe speeds to the design of our roads. Safety features of the road environment, the mix of road users and survivability in the event of a crash, will inform road design and operation.

Smart vehicle technology and automated compliance systems will support drivers, as the driving task is increasingly automated.

Safe people

People are the most unpredictable element of a safe system. Innovative technology, education, incentives and enforcement will shift behaviour and ultimately design human error out of the road system. Increasing connectivity will mean that people can be engaged in finding and sharing solutions to safety, mobility and transport challenges.

Reference material

Support materials for the draft Road Safety Plan 2021

- [NSW trauma reports](#) (including key data) prepared by TfNSW Centre for Road Safety to inform 2017 Expert Workshops for the draft Road Safety Plan 2021 development, covering ten key themes.

Definitions and research references

Data definitions

- Data is average of 2014-2016p unless otherwise specified. Crash data is for 2016 is preliminary.
- Serious injuries data is 'matched' serious injuries data unless otherwise stated. Matched serious injuries data are where a Police report has been matched to hospital admissions data.
- As a proxy for neighbourhood street crashes the analysis uses data relating to unclassified roads with a speed limit of 50km/h or lower

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Draft Tourism and Transport Plan

Supporting the Visitor Economy

October 2017

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1. About the Draft Tourism and Transport Plan

The Draft Tourism and Transport Plan is one of the supporting plans in the Future Transport program:

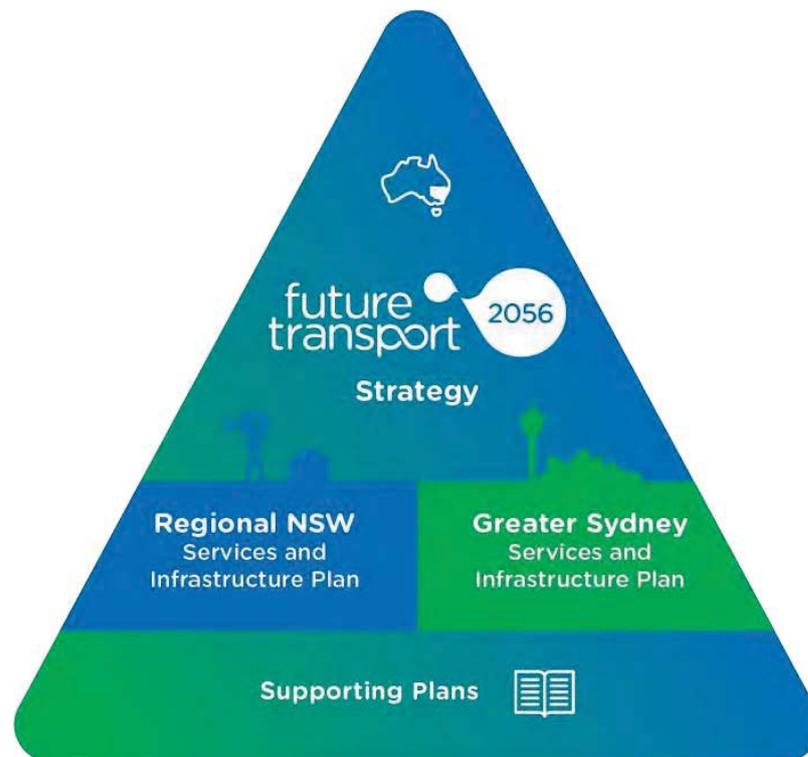


Figure 1

The Strategy sets the vision, statewide directions and headline initiatives that will deliver the 6 priorities

The Services and Infrastructure Plans set the service outcomes for Greater Sydney and regional NSW for the movement of people and freight, to meet customer needs and deliver responsive, innovative services

The Infrastructure Plans define the network initiatives we will deliver, plan to investigate or consider in the longer-term to achieve the service outcomes in Greater Sydney and regional NSW, including network enhancements, asset maintenance and renewal, and future corridors for protection

The Supporting Plans, including this draft Tourism and Transport Plan, are more detailed issues-based or network-specific planning documents which form part of the Future Transport suite

How to give feedback

This is a draft plan and everyone in NSW is invited to offer their feedback. You can do this in three ways:

1. You can react and comment at the base of each page
2. You can highlight any phrase or paragraph, react and comment
3. You can enter a formal submission, through our [Submission Portal](#).

2. Ministers' foreword

Tourism is worth \$38 billion to the NSW economy and employs 261,000 people - one in every 14 jobs in the state. Tourism is especially important to the regional NSW economy. In 2016, 65 per cent of state-wide overnight stays and day trips were in regional NSW, generating \$15 billion in visitor expenditure.

We value visitors to NSW as important transport customers.

From vibrant and friendly cities and towns, to the rich history and natural wonder of the regions, NSW is a huge drawcard for domestic and overseas visitors. Our state capital, Sydney, is the international gateway for visitors to Australia and doubles as a leading location for business and major attractions of sport, festivals and entertainment.

Regional NSW, from its outstanding food and wine regions to its pristine beaches and World Heritage listed, awe-inspiring landscapes, is a diverse patchwork of exploration and relaxation possibilities for young and old tourists from around the world.

Whether visitors come from within NSW, interstate or overseas, transport plays a vital role in the visitor experience.

In 2016, our transport network carried more than 33.3 million overnight visitors around NSW, connecting them to unique destinations and experiences across our beautiful state.

The NSW Government has committed to a goal of doubling overnight visitor expenditure in the state by 2020.

Transport for NSW is currently contributing to achieving this goal through:

- New ticketing products, improving options for visitors and encouraging them to travel by public transport across NSW - including the NSW TrainLink Discovery Pass, Opal ticketing and a Contactless Payment trial
- Wayfinding improvements, including public transport and roadside signposting across NSW
- New train, bus and ferry services in Sydney serving growing numbers of visitors to key destinations including the Blue Mountains, Bondi Beach and Darling Harbour
- Transport infrastructure upgrades enabling greater destination options across NSW, including along the Pacific Highway corridor, which has contributed to significant growth in national park visits.

This draft Tourism and Transport Plan, a commitment made by the NSW Government in 2015, supports the Government's tourism goals by proposing Future Transport initiatives from the short to the long term.

Our visitors are important transport customers and this plan places their needs at the centre - addressing the entire visitor experience from planning trips to arrival, enjoying our wonderful destinations and sharing the journey with friends and family.

We welcome your feedback to improve the plan and support tourism growth in our cities and regional communities.



Andrew Constance
Minister for Transport
and Infrastructure



Melinda Pavey
Minister for Roads, Maritime
and Freight

3. Community engagement on Future Transport 2056

Between 15 May and 15 July 2017, Future Transport sought feedback on from stakeholders across Greater Sydney and regional NSW.

The engagement was undertaken to raise awareness and stimulate discussion on the ideas and topics to inform the Draft Future Transport Strategy, the Draft Service and Infrastructure Plans, and the issue specific plans like this Draft Tourism and Transport Plan.

A number of important issues arose during the consultation process, including:

- **Public transport** Improving the frequency, capacity, cross-regional connectivity, safety and speed of public transport
- **Interchanges** Improving ease of access to interchanges and facilitating better connections to local transport and active transport options
- **Transport and land use** Ensuring transport keeps pace with development and population growth
- **Freight** Addressing freight movement on the roads issues
- **Technology** Proactively preparing for emerging technologies to adopt what's most suited and beneficial to local needs and taking up technology that personalises services and coordinates all transport services for the customer
- **Accessibility** Ensuring services are accessible, readily available and affordable for everyone.

Engagement with a range of stakeholders and customers in Greater Sydney and regional NSW will continue until release of the final Future Transport Strategy in 2018.

The final Tourism and Transport Plan will be influenced by feedback from community, industry and government stakeholders in the context of other tourism strategy and planning currently in development including:

- The NSW Visitor Economy Taskforce and review of the 2012 Visitor Economy Industry Action Plan
- The NSW Cruise Development Plan
- The NSW Food and Wine Tourism Action Plan

4. Achievements since 2012

Delivering transport actions in Visitor Economy Industry Action Plan

The NSW Government developed the [Visitor Economy Industry Action Plan](#) in 2012. Since then, the needs of visitors have been incorporated into transport planning and service delivery. We have already implemented the transport-related recommendations made in the Action Plan, as outlined below.

Recommendation 9: Take urgent action to address the issue of ground transport access to Sydney Airport.

Examples of achievements since 2012

- [Comprehensive road upgrades are underway](#), which connect with internal road upgrades
- [Extra train services have been added](#), with more train and bus services planned

Recommendation 14: Ensure that visitor needs relating to access to visitor precincts and major event venues are understood and effectively considered in the transport planning process.

Examples of achievements since 2012

- Long term transport planning is incorporating visitor facilitation and access issues across all transport modes
- Projected visitor numbers are included in forecasting for new transport projects and services
- Major projects currently in delivery including the [CBD and South East Light rail](#) are designed to accommodate major events like those in the Sydney Cricket Ground precinct

Recommendation 24: Develop a Visitor and Transport Policy to ensure that visitor needs and improved visitor service are incorporated into transport planning and service delivery.

Examples of achievements since 2012

- Visitors are recognised as our customers throughout the planning and delivery of transport infrastructure and services

Recommendation 25: Develop a cost-effective and integrated public transport ticket system which specifically meets the needs of visitors and includes major attractions and events packages that are appealing and easy to use for visitors.

Examples of achievements since 2012

- The integrated Opal ticketing system has improved the experience for all public transport users
- Regional coach and rail ticketing and information is now available on the single transportnsw.info site
- [Contactless payments](#) are making it easier for travel on the Manly ferry – a key visitor service.

We have learned from implementing recommendations from the NSW Visitor Economy Industry Action Plan and recognise there is more to be done to improve the experience for visitors and further support the Government’s goal to increase overnight visitor expenditure. The Government is about to embark on the review of the Visitor Economy Industry Action Plan to ensure NSW can prioritise initiatives and actions that will deliver the greatest benefits to the NSW visitor economy by 2020 and beyond.

“As part of the (NSW Visitor Economy Industry Action Plan) review, we call for integrated transport and tourism plans for Sydney and regional NSW.”

- NSW Business Chamber, 2017

5. Introduction

The role of transport in the visitor economy

Customers from overseas and interstate expect transport services that are accessible, comfortable, and easy to use and connected to destinations. This draft plan focuses on how transport policy, assets and services can support the visitor economy in NSW.

Visitor economy customer outcomes

Enhancing the visitor experience

Meeting the transport needs of customers visiting our cities and regions means ensuring services are accessible, comfortable, easy to use and suitable for people travelling in groups, carrying luggage and travelling outside of peak hours and on weekends to popular tourist destinations.

Seamless connections between airports, cruise ship terminals, mass transit services, on-demand services and car and bike rentals will enhance the experience for visitors. New technologies will make planning, booking and paying for travel and wayfinding on transport services easier.

Growing the visitor economy

Transport is essential in connecting visitors to our cities and regions. By expanding and improving connections to new destinations, transport can create new visitor experiences across the state and support new industries and employment in regional communities.

Making transport the attraction

Transport not only gets visitors to destinations, but can also be an attraction in itself. Heritage tours, walking and cycling trails, and iconic journeys by road, rail and sea all contribute to attracting visitors to NSW. These transport-related activities form part of the \$15.4 billion NSW leisure tourism market, which accounts for 59 per cent of the NSW visitor economy.

Alignment with the draft Future Transport Strategy

The draft Tourism and Transport Plan is guided by the six statewide outcomes that make up the draft Future Transport vision for the next 40 years.

1. Customer Focus

By considering visitors as our customers, we can shape more responsive and tailored transport infrastructure and services.

2. Successful Places

Creating successful places will create more desirable tourism destinations.

3. A Growing Economy

Increasing tourism will play a key role in growing the NSW economy.

4. Safety & Performance

Providing a safe and high-performing transport system will improve the visitor experience.

5. Accessible Services

Accessible tourism will make it easy for all people to enjoy tourism experiences. This includes: seniors, people with a disability, people from non-English speaking backgrounds, parents with children and people with luggage.

6. Sustainability

Providing the right services in the right locations for our visitors will lead to a more efficient network, create better places and improve the financial sustainability of our transport system.

Improving the environmental sustainability of our transport system will drive tourism, including nature-based activities, which 27.1 million people took part in 2016.

Future Transport Strategy Outcomes

1	2	3	4	5	6
Customer Focus	Successful Places	A Growing Economy	Safety and Performance	Accessible Services	Sustainability
Visitor economy customer outcomes					
1. Enhancing the visitor experience		2. Growing the visitor economy		3. Making transport the attraction	
Constraints and opportunities for transport to support the visitor economy					
1. Ticketing			2. Information		
3. Transport services		4. Transport infrastructure		5. Planning and coordination	
Delivering through initiatives outlined in the Services and Infrastructure Plans					

Figure 2

Future transport supporting tourism

Improvements to transport infrastructure and services will also improve the experience for visitors, particularly where investment focuses on technology-enabled customer information, network connectivity and service integration.

Constraints and opportunities

There are five key areas of focus where Transport for NSW can support the visitor economy in NSW: ticketing, information, services, infrastructure, planning and coordination of transport. There are initiatives the Transport cluster is undertaking under each of these categories, as well as identifying new initiatives for further investigation.

The initiatives identified for investigation in this Plan aim to support the unique tourism opportunities in each region.

Summary of initiatives for investigation

Initiatives identified for investigation will address current constraints for visitors as they make their way around NSW. Categories of initiatives are listed on the right of the following table as opportunities for investigation. Shading indicates the lead time needed to deliver initiatives within each category.

Constraints		Opportunities		
		Committed initiatives	Initiatives for investigation	Visionary initiatives
Ticketing	<ul style="list-style-type: none"> • Availability of tickets • Knowledge of ticketing system 	New payment and ticketing options		
		Regional train and coach ticketing		
Information	<ul style="list-style-type: none"> • Legibility of the transport system • Languages other than English 	Wayfinding		
		Visitor information and regional promotion		
Transport Services	<ul style="list-style-type: none"> • Demand for transport during peak holiday times and events • Serving dispersed new and emerging visitor destinations 	Customer service on visitor routes		
		Making transport the attraction		
		Servicing visitor demand		
		Supporting the late night economy		
		Connecting key gateways including cruise terminals and airports		
Transport Infrastructure	<ul style="list-style-type: none"> • Lack of appropriate infrastructure for some visitor activities • Underutilised assets 	Re-purposing assets		
		Regional roads		
		Promoting regional bicycle tourism		
Planning and Coordination	<ul style="list-style-type: none"> • Managing events • Prioritising visitors within limited budget 	Servicing events, festivals and peak holiday times		
		Integrate tourism needs into transport planning		



Figure 3

A flexible, agile investment approach

Our investment approach is designed to be flexible, responding to change and uncertainty. The draft timeframes are indicative, based on preliminary evidence, of when potentially these initiatives may be need to be implemented or committed.

Further investigation of all initiatives in the Draft Strategy and Plans will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

Initiatives are listed in the following categories:

- **Committed initiatives (0-10yrs)** – initiatives that either have committed funding, are committed/ contractually committed, are for immediate detailed planning, or are part of key maintenance, renewal or safety programs. Some initiatives are subject to final business case.
- **Initiatives for investigation (0-10, 10-20yrs)** – intended to be investigated for potential commitment or implementation within the next 20 years. Those listed in 0-10 horizon will be prioritised for more detailed investigation to determine if they are required in the next decade.
- **Visionary initiatives (20+ years)** – longer term initiatives that may be investigated within the next 10 years, but are unlikely to require implementation within 20 years.

“The success of the visitor economy is underpinned by well-coordinated interaction between the transport and tourism sectors.”

– Tourism and Transport Forum, 2017

6. State of tourism in NSW

Value of tourism in NSW

Tourism is worth \$38 billion to the NSW economy and employs 261,000 people, or 1 in every 14 jobs, in the state. NSW makes up 29 per cent of Australia's total tourism consumption.

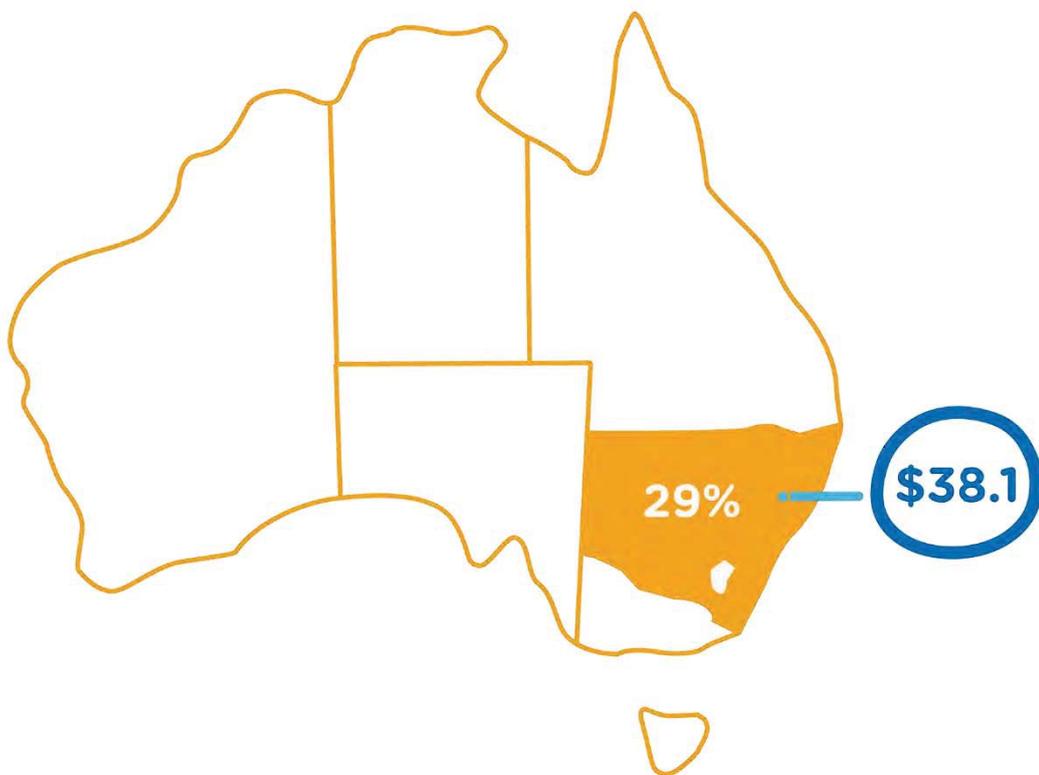


Figure 4 – Image source: *State Tourism Satellite Accounts and Tourism Businesses in Australia, Tourism Research Australia*

Employment

The tourism sector employed 261,000 people in NSW in 2016 (directly and indirectly).

Spend by purpose of visit

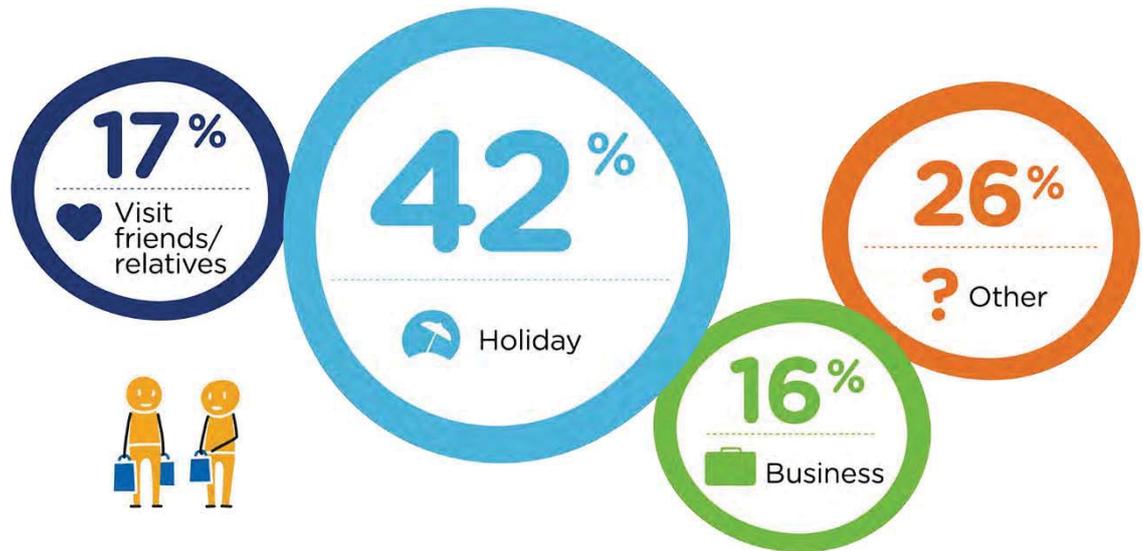


Figure 5 – Source: *National and International Visitor Surveys, YE December 2016, Tourism Research Australia*

Tourism in Sydney and regional NSW

In 2016 NSW received 33.2 million overnight visitors, who stayed 183.3 million nights and spent \$26.2 billion.

Sydney

Sydney is the number one capital city in Australia for visitors, nights and expenditure. Sydney received over 3.6 million international overnight visitors who spent over 74.1 million nights in Sydney in 2016. The highest number of tourists were from mainland China, who accounted for 18.4% of international visitors and stayed for 16 million nights, spending \$2.6 billion in 2016.

'Visiting friends and relatives' (38%) was the main purpose of visit for the largest proportion of domestic visitors to Sydney, followed by 'business' (29%) and 'holiday' (26.0%).



Figure 6 – Image courtesy of Destination NSW

Regional NSW

Regional NSW is equally important to the visitor economy in NSW. Domestic and international visitors to NSW destinations outside Sydney generated 84.3 million nights of accommodation NSW and \$15 billion in visitor (overnight and day trip) expenditure in 2016. 'Holiday' (47%) was the largest purpose of visit for visitors to regional NSW, followed by 'visiting friends and relatives' (35%) and 'business' (13%). Regional NSW was the largest source of visitors to Sydney (42%) and Sydney was the largest source of visitors to regional NSW (36.4%). There is a great opportunity to grow the visitor numbers in regional NSW by showcasing the destinations and attractions on offer.

Regional overnight stays in NSW



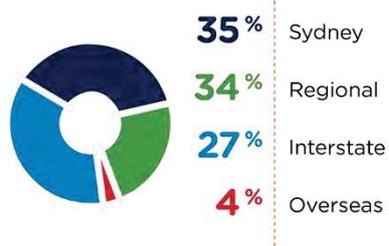
Figure 7 – Overnight Stays in NSW: 46 per cent were in regional NSW. Source: National and International Visitor Surveys, YE December 2016, Tourism Research Australia

20.9 million

visitors to Regional NSW in 2016



Origin of visitors



37.2 million

domestic day trips to Regional NSW in 2016



Figure 8

Top reasons for trips to Regional NSW

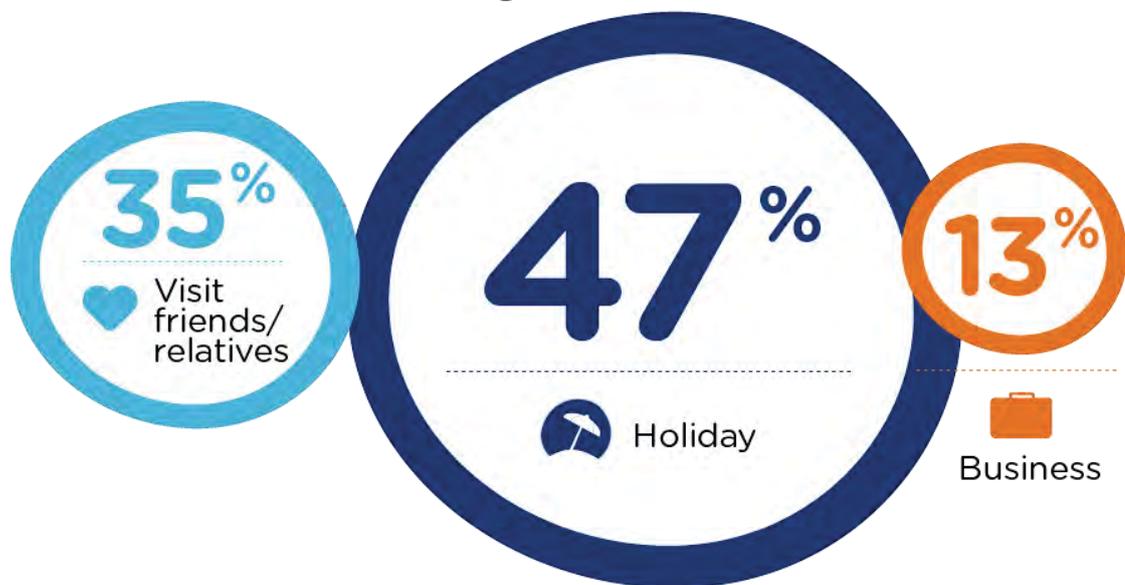


Figure 9 – Source: National and International Visitor Surveys, YE December 2016, Tourism Research Australia

The North Coast is the most visited regional destination, followed by the Hunter, Illawarra and the South Coast.

“If it’s a great place to live, it’s a great place to visit.”

– Tourism and Transport Forum, 2017

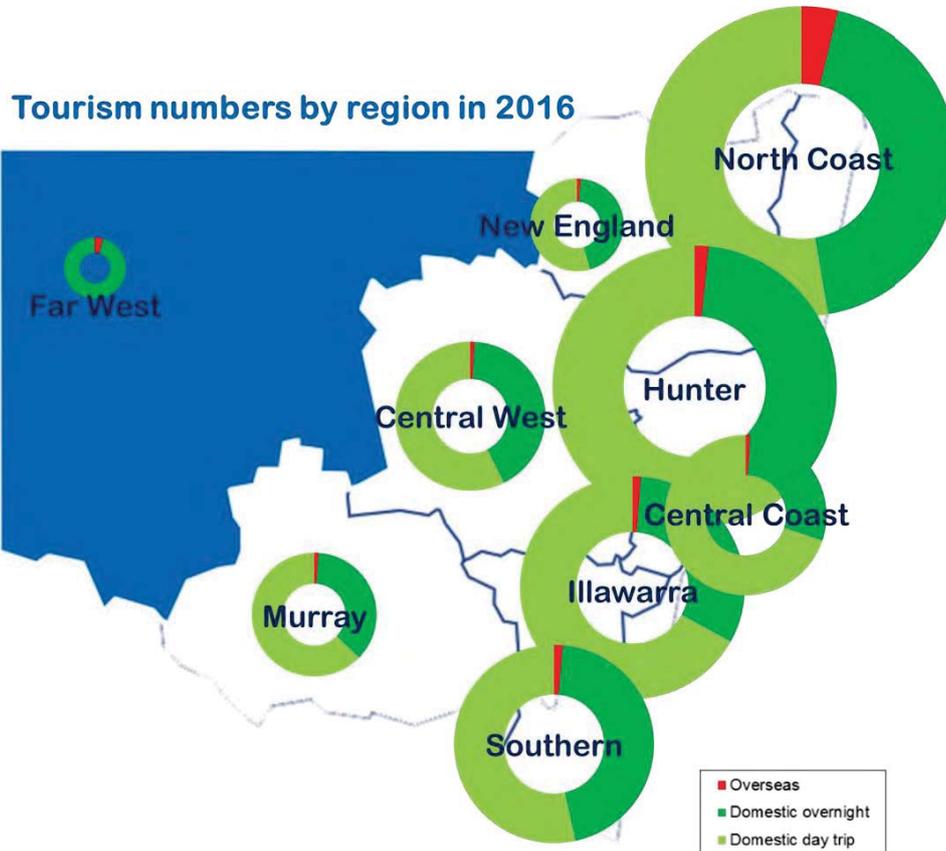


Figure 10

Transport can play a major role in growing regional tourism, by providing new and more convenient ways to get to and travel around regional destinations and attractions. Transport can also showcase these destinations through advertising on the network and improving roadside signage.

Airports bring the largest number of international visitors to our shores, while roads are the main way domestic visitors travel within NSW.

Camping and caravan tourism, which relies on a safe and efficient road network, accounted for over 4 million domestic caravan and camping visitors in 2016, spending an estimated \$3 billion.



Figure 11 – Image courtesy of *Destination NSW*

Expected tourism growth

Tourism is expected to grow robustly in both Sydney and regional NSW. By 2025, total visitor nights are expected to grow by:

- 174,000 in Sydney
- 110,000 in regional NSW.

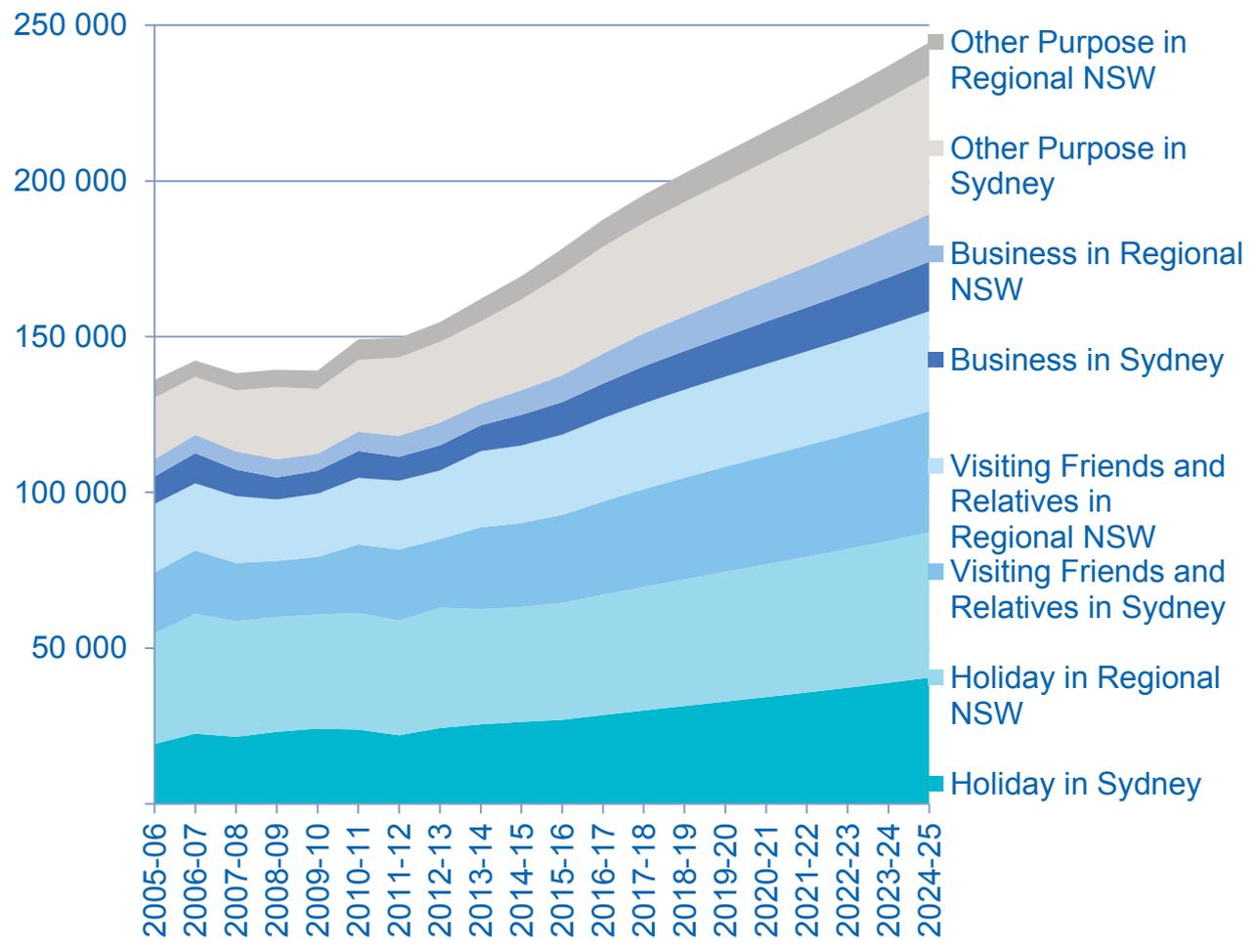


Figure 12 – Source: *Tourism Forecasts 2017, Tourism Research Australia*

National and international visitors to NSW

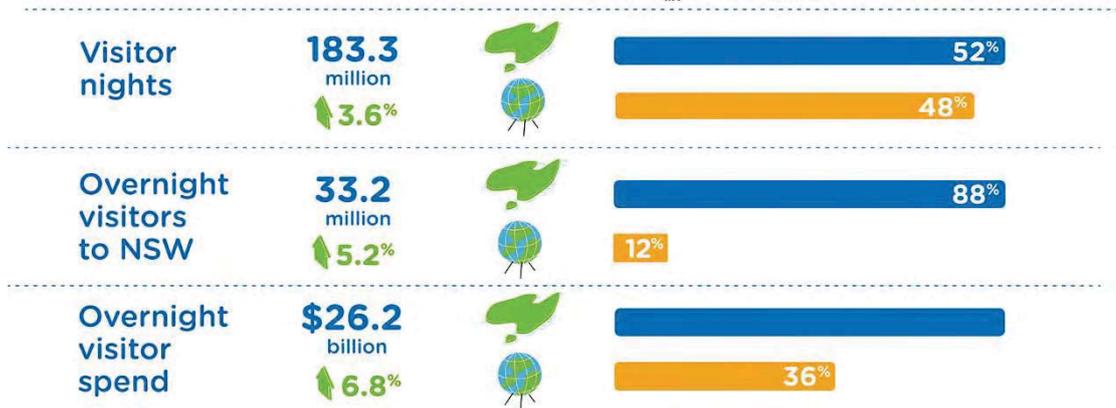


Figure 13 – Source: *National and International Visitor Surveys, YE December 2016, Tourism Research Australia*

Tourism in NSW has increased on all major measures (year ending December 2016). International visitors account for nearly half of visitor nights in NSW.

International visitors

Visitors from non-English speaking countries now outnumber visitors from English speaking countries. In the year to January 2017, NSW welcomed 3.1 million international short-term visitors.

The top ten source markets for NSW accounted for 71.6 per cent of all international short-term visitors to NSW.

Top 10 countries of origin for visitors to NSW

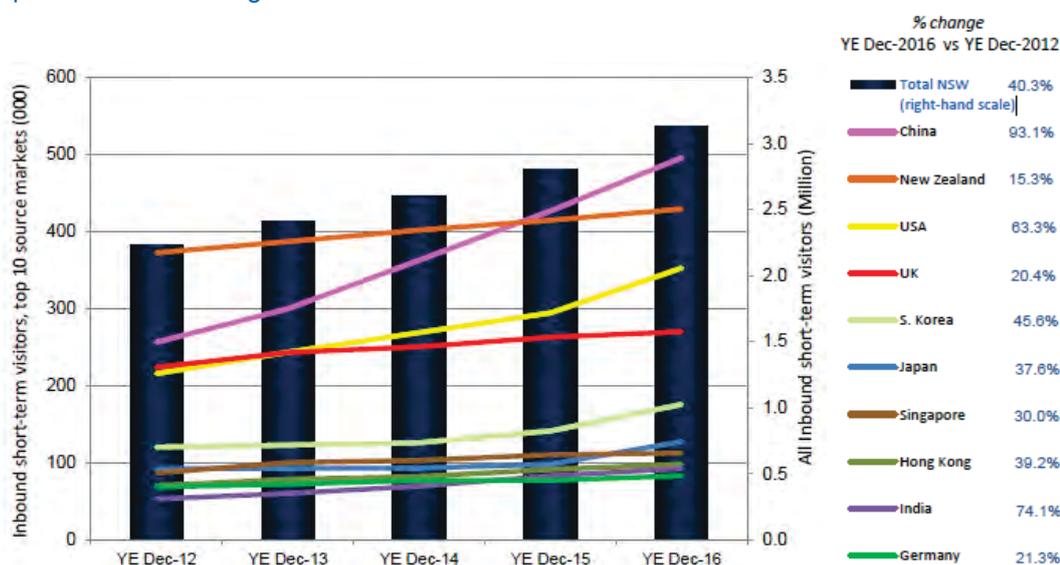


Figure 14 – Source: *Overseas Arrivals and Departures, Australian Bureau of Statistics (ABS)*

Our services need to adapt to better meet the needs of our culturally and linguistically diverse visitors.

Cruise ship visits

Cruise ship tourism is expected to continue growing. Cruise ships are getting larger and more frequent.

- The 2016-17 financial year was the biggest NSW cruise season ever. We welcomed 1.53 million passengers through our cruise terminals, with Sydney Harbour hosting more than 300 ships, including 10 maiden voyages.
- In 2017-18, 360 cruise ships are scheduled to visit Sydney, including 8 maiden voyages.

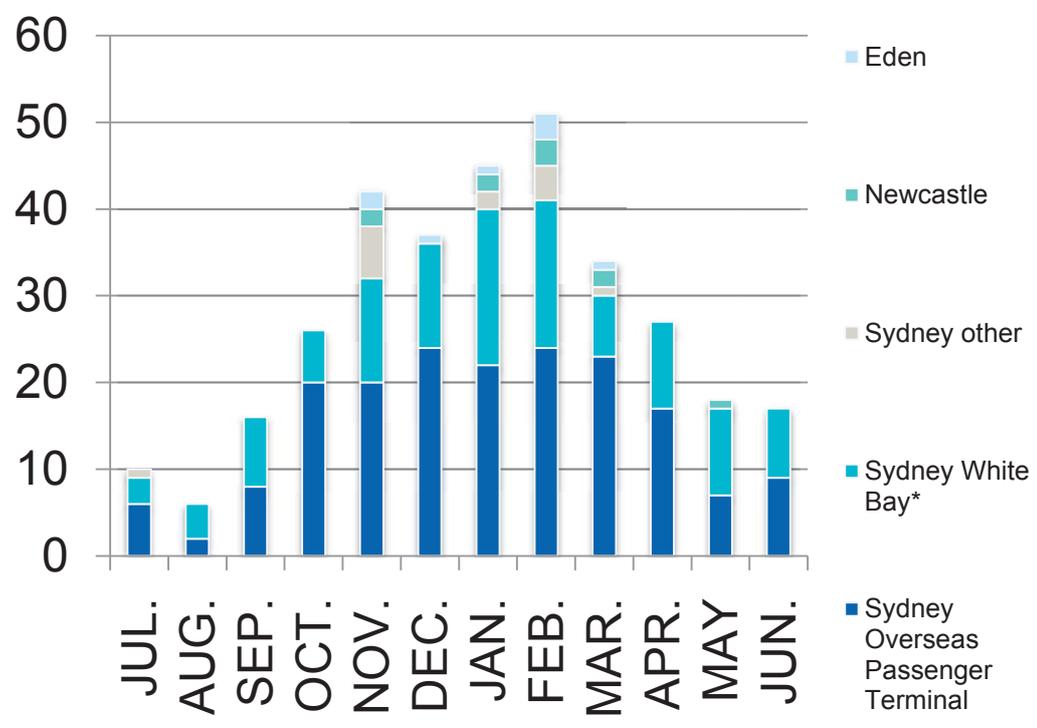


Figure 15



Figure 16 – Image courtesy of Destination NSW

Growth opportunities by region

The initiatives identified for investigation in this plan aim to support the unique tourism opportunities in each region of NSW. Research undertaken for the NSW Government identified the following tourism-related economic opportunities for each NSW region.



Figure 17

North Coast

As the largest tourist destination within regional NSW, further develop the region's amenities and attractions focused on the national parks, marine assets and events and festivals to support further tourism growth in the area

New England and North West

Capitalise on the region's natural parks, artesian spas in Moree and a rich cultural heritage to develop the region as a visitor destination

Hunter

Grow the visitor offering in the region by developing attractions in Newcastle and building on the strength of the Hunter Valley's wineries and the coast

Central Coast

Capitalise on the region's natural amenities and proximity to major population centres to encourage further visitation by enabling improvements to visitor amenities and accommodation

Illawarra-Shoalhaven

Build on Wollongong's proximity to Sydney and its existing range of attractions and amenities, to further develop its offer to both business and leisure visitors

Activate the potential of Shoalhaven's pristine coastline, national parks, and existing strengths in boutique food and wine production, to develop a compelling visitor proposition

South East and Tablelands

Develop the Snowy Mountains into Australia's premier winter and summer alpine destination

Develop the Far South Coast into a premium destination for visitors attracted to the pristine coastline and boutique culinary experiences

Riverina-Murray

Capitalise on the natural amenities of the Murray River and existing visitor attractions by developing an expanded range of attractions to drive further visitation to the region

Central West and Orana

Develop the potential of the region's existing amenities including strengths in fine food and wine experiences and tourist attractions with further supporting investments to drive visitation, length of stay and spend

Far West

Build on the region's heritage and unique tourism assets, such as the opal fields and national parks, to develop a compelling offer for a broader range of visitation segments

Boating

Boating plays a key role in supporting the visitor economy

Visitors are attracted to a range of recreational activities on the water in NSW including boating, fishing and yachting.

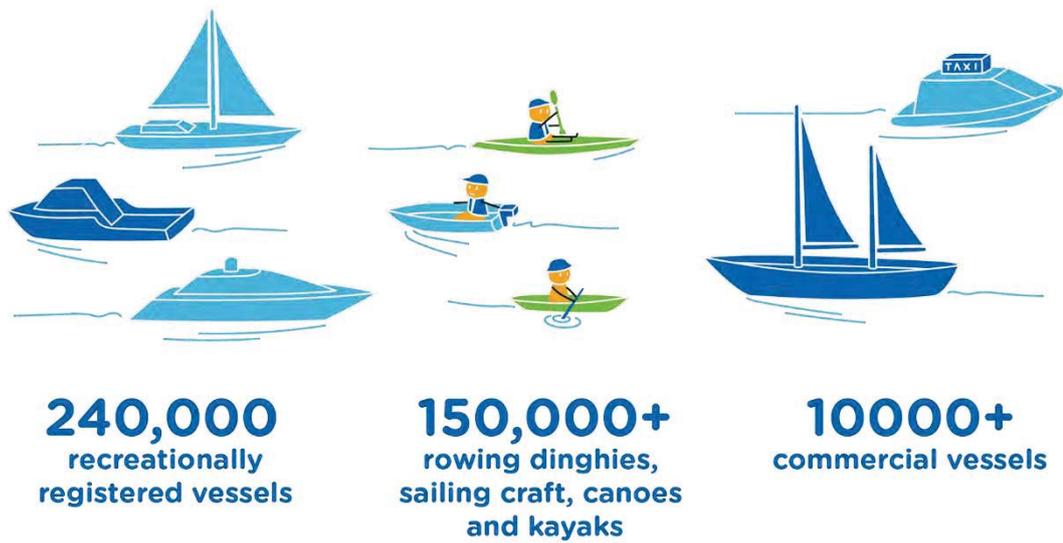


Figure 18

As of 30 June 2017, there were nearly 240,000 recreationally registered vessels and 10,000 commercial vessels in NSW. Recreational and commercial activities on our waterways contribute an estimated \$2.7 billion to the state economy and employ an estimated 8,000 people.



Figure 19

A large proportion of ferry customers are also visitors, with 15 million ferry journeys in NSW each year, servicing tourism hubs such as Circular Quay, Darling Harbour and Manly.



Figure 20

The commercial vessel sector also plays an important role in showcasing NSW waterways to local, interstate and international visitors through various forms of charter and tourist services including harbour cruises, river cruises, fishing charters, whale watching and adventure-based services.

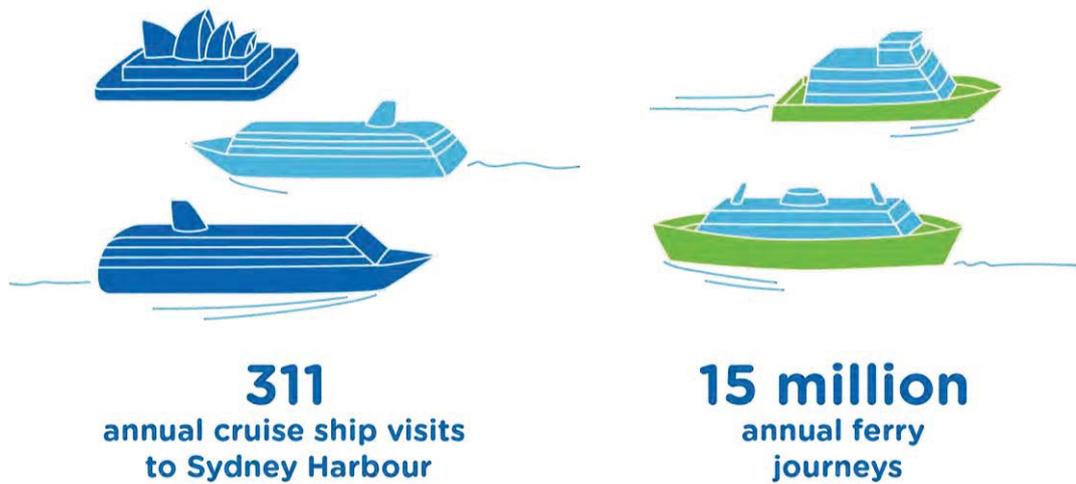


Figure 21

Nature-based tourism

Transport can facilitate growing nature and cultural tourism in more locations in NSW

Nature-based tourism includes outdoor and nature experiences, and is one of the main reasons people visit regional NSW. In 2016 visitors who took part in a nature-based activity stayed 46.2 million nights in regional NSW, spending \$8.5 billion. Thirty-two per cent of visitors to regional NSW participate in a nature tourism experience.



Figure 22

National parks cover 9 per cent of NSW and generate more than \$11 billion per year in expenditure, enabling hundreds of small to medium businesses to operate across the state. Over the past two years, national parks have seen a 30 per cent increase in visitation.

National parks in the Sydney basin provide valuable open space and recreational opportunities for a growing number of residents and visitors to the region. Transport infrastructure and services are needed to accommodate this growth.

Regional NSW national parks have seen significant growth in visitor numbers where transport has been improved. For example, upgrades to the Pacific Highway corridor have contributed to a 70 per cent increase in visitation in the North Coast Region.

NSW national park and road network



Figure 23

Improved visitor access to national parks could enable the further growth of nature-based tourism. This could be achieved through:

- Improved connections to parks from key visitor gateways like regional airports and cruise terminals
- Upgraded wharf infrastructure to access island parks including the Sydney Harbour Islands
- Linked transport packaging to events hosted in national parks, such as mountain bike championships and cultural events
- More regular public transport to some of the most visited national parks around Sydney, to reduce and manage road congestion
- Increased signage to national park destinations along main roads, aligned to a broader tourist drives strategy
- Coordinated road safety upgrades and road sealing at entry and exit points near high speed roads
- Regional cycling connections to national parks
- Links with operators to improve accessible tourism to national parks.

7. Visitor transport needs

The transport needs of visitors and people who work in tourism differ from weekday commuters

To create a world class travel experience for visitors, we need to consider the needs of customer groups who may be unfamiliar with the transport system and travelling at different times.

Improving out of peak hours services

Meeting the transport needs of customers visiting our cities and regions means ensuring services are accessible, comfortable, easy to use and suitable for people travelling in groups, carrying luggage and travelling outside of peak hours and on weekends to popular tourist destinations.

The visitor economy operates all day, every day. Opportunities to connect visitors to a wide range of experiences, whether on short or long stays, requires transport services to be available for both visitors and tourist businesses alike. For example, the Western Sydney Airport will offer 24/7 operations and will need to be serviced by efficient transport links for both employees at the airport and co-located businesses as well as travellers. Similarly, cruise ships can berth out of hours and frequently have short stopovers. Visitors will expect to access retail and leisure activities with minimal travelling time.



Figure 24

Creating accessible tourism

Older people make up a substantial and increasing proportion of visitors to Sydney and regional NSW and therefore make an important contribution to the visitor economy. NSW accessible tourism is valued at around \$8 billion per year and is growing. Twenty per cent of the population has a disability and of these, 88 per cent take a holiday each year. Around one third (29 per cent) of visitors to Sydney are aged 55 years and over, and closer to two thirds travelled in groups of two or more people, adding to the importance of ensuring services are flexible and fully accessible. The proportion of older people and people travelling in groups are even higher in regional NSW.

“Visitors with disabilities are usually accompanied by carers, friends and family, which makes inclusive tourism a huge section of the travel market.”

- Local Government NSW President Councillor Keith Rhoades



Figure 25

Age of visitors to Sydney



Figure 26 – Source: *National and International Visitor Surveys, YE December 2016, Tourism Research Australia*

Combined with an ageing population, the proportion of people with disability will increase, representing a growing market for travellers who require the physical environment as well as digital engagement and marketing material to be adapted to meet their needs. This growing market for Accessible Tourism presents both short term and long term opportunities in making tourism and recreational activities universally accessible.



Figure 27

The visitor experience

Enhancing the end-to-end journey for visitors

PRE- JOURNEY	ACCESS AND TRAVEL	ARRIVE	POST-JOURNEY
<p>Planning</p> <p>Ease of planning and booking transport</p> 	<p>Travelling to and from</p> <p>Quality and integration of transport</p> 	<p>Experiencing the destination</p> <p>Ease of getting to and around sites and attractions</p> 	<p>Sharing</p> <p>Sharing the experience with friends and family</p> 
<p>The visitor experience starts before leaving home with planning and booking the visit. Transport has a key role in creating a positive pre-travel visitor experience through the availability of transport information and ticket booking services before leaving home.</p>	<p>The visitor experience continues with travel to and from the destination, which is shaped by the quality and integration of the transport services and infrastructure. Connecting transport modes seamlessly enriches the tourism experience. In future, tourists will increasingly expect streamlined connections between tourism gateways like cruise ship ports and airports and destinations.</p>	<p>The destination experience is often shaped by the ease of getting to and around the sites and attractions. Creating attractive and vibrant places that are well-connected to the transport network will also help boost tourism. An example is Circular Quay, where Government investment to upgrade the ferry wharfs will unlock private capital for a whole of precinct renewal including retail, dining and entertainment attractions as well as a modern transport interchange.</p>	<p>Sharing the journey with friends and family is the final part of the visitor experience and is key to supporting the visitor economy. Transport can create opportunities for visitors to share their experience during and after their trip, for example through social media.</p>

Figure 28

We can enhance the end-to-end visitor experience and enable visitors to move around the network seamlessly and enjoy transport connections to attractions and tourist precincts by:

- Improving public transport connections to arrival and departure points such as airports and cruise terminals
- Facilitating the development of new apps that provide a single point of information and allow tourists to purchase products that bundle travel with cultural activities and tourist attractions

- Providing clear wayfinding to help visitors and infrequent network users navigate the network easily and seamlessly
- Providing opportunities for visitors to share their experience during and after their trip on social media, with WiFi access at key interchanges and on public transport.

“Connected, integrated and active cities and regions are key to improving liveability for residents and creating destinations that are attractive to visitors.”

– Tourism and Transport Forum, 2017

8. Ticketing

New payment and ticketing options

New contactless payments and ticketing options will make using public transport easier for visitors.

The number of active Opal cards has remained relatively stable since 2015 but the number cards issued continues to rise. By December 2016, more than 11 million cards had been issued, suggesting that many cards are being purchased for use by visitors during their stay.

We have holistic approach to improving Opal for visitors, which includes improvements to Opal technology and infrastructure, on-mode communications, marketing, wayfinding, and communication and training of staff.

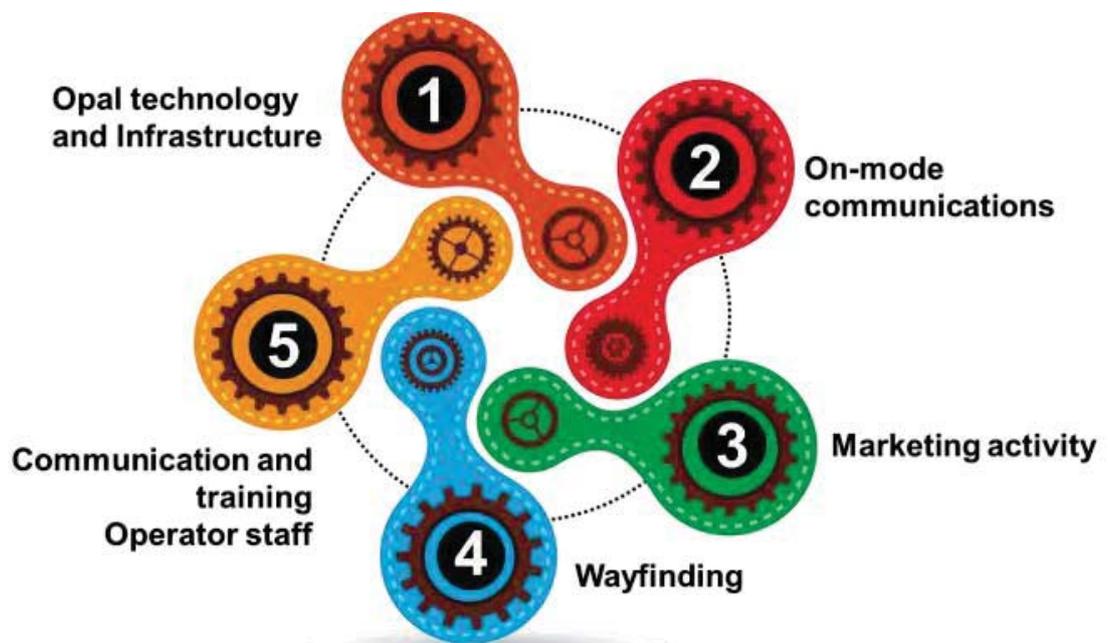


Figure 29

Committed initiatives (0-10 years)

- Opal Business Toolkit
- Opal Visitor Guide (includes map)
- Interactive Opal Visitor Guide - for conference market
- Airport DL Flyer
- Ad in the Official Sydney Guide
- Opal visitor video
- DNSW Cruise Ship Ambassador Program
- [Multicultural support](#)
- Cruise Ship Development Plan
- [Visitor Information](#) on transport.info website
- Engagement with various Government institutions and tourist operators
- Smarter Ticketing Brochure - Translated

Initiatives for investigation (0-10 years)

Option	Timeframe
Availability	
Extending the trial of contactless payments - enabling customers to pay their single trip ticket fare directly by tapping on and off with a credit card, mobile device or wearable.	Trial underway for Manly ferry
Opal top up machines in main languages of visitors	0-5 years
Extend Opal ticketing to other private operators like private ferries	0-5 years
Packaging	
Partner with organisations to give visitors discounts to entry to key attractions when purchasing an 'Opal visitor pack'	0-5 years

Packaging regional destinations

The Transport for NSW travel planning website – <https://transportnsw.info/> – is one of the most visited websites in Australia.

The site now includes information on all regional services and promotes events and destinations within NSW, with packages that include travel as part of entry fees for many major events.

Committed initiatives (0-10 years)

- NSW TrainLink Discovery pass - multi-day regional rail and coach tickets
- Destinations described on the NSW TrainLink website
- Rail and coach tickets available at physical sales agents across NSW, QLD, VIC and SA and on the NSW TrainLink website

Committed initiatives (0-10 years)

- Regional tourism destinations advertised on trains and at stations across NSW

Initiatives for investigation (0-10 years)

Option	Timeframe
Improve NSW TrainLink booking system	0-5 years
Packaging	
Package regional rail and coach tickets with car hire and car share	0-5 years
Partnerships with selected industry operators / inbound tour business and Accredited Visitor Information Centre network	0-5 years
Develop a booking platform that allows third party online booking agents to sell rail and coach tickets alongside airline bookings	0-5 years
Availability	
App for integrated booking, so customer can book trains/coaches online, be allocated a seat and pay via credit card/bpay/bank transfer	0-5 years
Online booking service for customers with special needs on regional trains and coaches	0-5 years
Self-service ticket terminals for regional services at Central Station	0-5 years

9. Information

Visitor information and regional promotion

Information about transport services presents opportunities to promote regional destinations

Our customers tell us clear and effective communication of timetable and service disruption information is very important. To continually improve our performance in this area, we are implementing a range of initiatives designed to make it easier for customers to access the information they need, wherever they are, and whenever they need it.

Personalising transport services to cater for the needs of our visitors means providing service planning information and wayfinding signage in accessible formats that can be easily understood or translated using mobile technology for people whose first language is not English, as well as ensuring customer service officers are available and can provide on-the-spot assistance and helpful advice for making connections easier and journeys more enjoyable.

The widespread use of smartphone technologies to plan, book and pay for transport services will be enhanced by new apps that provide real time alerts on service changes. Videos demonstrating how to use these apps and the travel planning toolkit are now available on the transportnsw.info website in a range of languages.



Figure 30

Transport for NSW will investigate ways to support the emergence of *Mobility as a Service* models that can be tailored to the needs of visitor groups or individuals. *Mobility as a Service* models make it possible for people to plan, book and pay for their transport services through a personal account. These transport options could include not only public transport but also point to point services, ride share and bicycle share, and can be bundled with other visitor experiences, such as dining and shopping.

Committed initiatives (0-10 years)

- Cooperative promotional activities with Destination NSW under formal MOU. Range of target markets (e.g. seniors), destinations and events (e.g. regional travel to Vivid)
- Targeted campaign in NSW TrainLink South region promoting regional services (to commence in May)
- Campaign to advertise self-service bookings for regional services
- Event posters (for events across the NSW TrainLink networks), and online events calendar feed from Destination NSW
- Awareness activities for NSW TrainLink regional services, including service/pricing information and distribution of collateral to motivate customers to travel more widely across NSW
- Cooperative promotional campaigns with selected destination managers and local tourism operators (e.g. Visit Dubbo)
- Promotional and advertising agreements with key tourism publishers promoting NSW TrainLink services (e.g. promotional messages on all tourism maps)

Initiatives for investigation (0-10 years)

Option	Timeframe
Visitor information centres in key locations, as well as a website and apps to provide broader integrated information about transport and other attractions for tourists	0-5 years
Increased marketing of Transport Information services and website for tourists	0-5 years
Integrated tourist information with transport information from airport to key attractions, in a mix of print, online and interactive kiosk format	0-5 years

Wayfinding

New technologies make wayfinding easier anywhere, anytime

Finding your way around NSW has never been easier with multiple smartphone apps for navigating the system. Transport for NSW has been collaborating with app developers over the past five years to produce a range of trip planning and wayfinding apps that can be assessed by visiting our data catalogue. Today we supply real-time data to apps with a total of more than 5 million unique customer downloads. The Open Data program will make these datasets, along with other transport data, more broadly available.

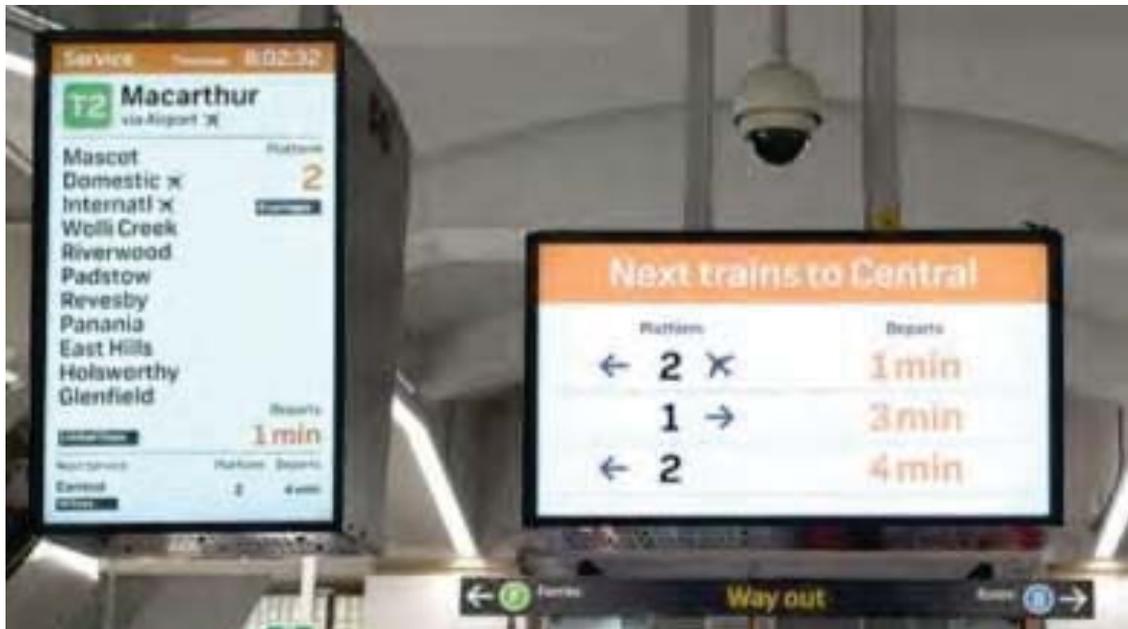


Figure 31

A new signage system introduced in 2013 has made it easier for customers to navigate their journey and change between modes of transport. The system, which is based on international best practice, reduces clutter for customers when they're entering busy transport locations and provides uniform codes and colours to enable easier navigation. It is now well established across all modes. We are continually improving the way we make use of digital information at stops and interchanges.



Figure 32

Committed initiatives (0-10 years)

Before the journey – trip planning

- Trip planning apps and real time information
- Timetable and real-time data is actively and openly shared with third-party developers

During the trip – wayfinding

- Rolling out consistent wayfinding across the network, including a 'kit of parts' for place managers to adopt
- Large internal electronic screens on new intercity trains and future new regional trains
- Enhanced automated announcements on new trains
- Roll out of customer information/help points and CCTV at all regional locations

Initiatives for investigation (0-10 years)

Option	Timeframe
Multi-language	
Announcements on board for key visitor destination interchanges in languages of main visitor groups	0-5 years
Wayfinding signage in languages (online and LED screens) of main visitor groups at key locations	0-5 years
Multi-lingual trip planning for top 3 visitor groups for prime tourist attractions	0-5 years
Before the journey – trip planning	
Market / promote trip plans for top 10 tourist attractions	0-5 years
Personalised app marketing – provide crowd information – to shift shoulder of peak	0-5 years
During the trip – wayfinding	
App to show availability of seating and crowding levels, and improve wayfinding within stations	0-5 years
Increase numbers of Station Passenger Information screens at regional locations	0-5 years

10. Transport services

Customer service on visitor routes

Customer satisfaction on trains, ferries and light rail is at record levels thanks to a significant focus on customer service

Staff are now more present and ready to assist visitors at key visitor hubs across the public transport network. Visitors are sharing their journey with friends and family with WiFi available on Sydney Ferries, and at Central Station and Circular Quay. WiFi is also being rolled out on select bus routes.



Figure 33

Committed initiatives (0-10 years)

- WiFi available on Sydney Ferries, and at Central Station and Circular Quay, and is being rolled out on select bus routes
- Staff are now more present at Sydney Trains stations to assist all customers
- Sydney Ferries operator offers a cafe on the Circular Quay to Manly ferry
- Phone charging stations on a number of Sydney Ferries vessels, including the Freshwater Class, which operates between Circular Quay and Manly

Initiatives for investigation (0-10 years)

Option	Timeframe
Extend WiFi access across the public transport network	0-5 years
Improved amenities and services at prime tourist locations	0-5 years
Integrated and coordinated multi-modal interchange e.g. Circular Quay and other prime tourist hubs	5-10 years
Integration of precinct management and transport customer services e.g. at Circular Quay	0-5 years
Integration of cultural attractions, heritage, tourism, special events in immediate proximity to major transport hubs e.g. Circular Quay	0-5 years
Improve amenities on regional trains (on-board & stations)	0-10 years
Allow space for a supplier to offer mobility scooter hire at Central Station for Accessible Tourism	0-5 years
Adult change toilets at Circular Quay and Central Station to enable Accessible Tourism	0-5 years

Making transport the attraction

Transport not only gets visitors to destinations, but can also be an attraction in itself

Public transport can provide opportunities for visitors to share their experience during and after their trip, as it is one of the best ways to see the highlights of NSW.

Walking is one of the best ways of seeing city attractions, while buses and ferries represent the best way to visit points and attractions around the harbour. Trains, light rail, buses and ferries provide an inexpensive way of seeing the most beautiful harbour in the world. Further, visitors consider riding a ferry or bicycle as potential activities to do while in NSW, and as ways to experience the place they are travelling to.

For example, Sunday is the busiest day for the ferry network and serves the leisure market. As a result, ferry timetabling is designed to meet this peak visitor demand rather than the morning peak.

NSW offers a Trip Planner that will allow anyone to work out a travel plan using a combination of train, light rail, bus and ferry services to get to a destination.

But the interest in transport as an attraction extends far beyond Sydney. The Byron Bay Railroad Company will operate the world's first solar powered train on the disused railway line between Byron Bay CBD and North Byron under licence from Transport for NSW.

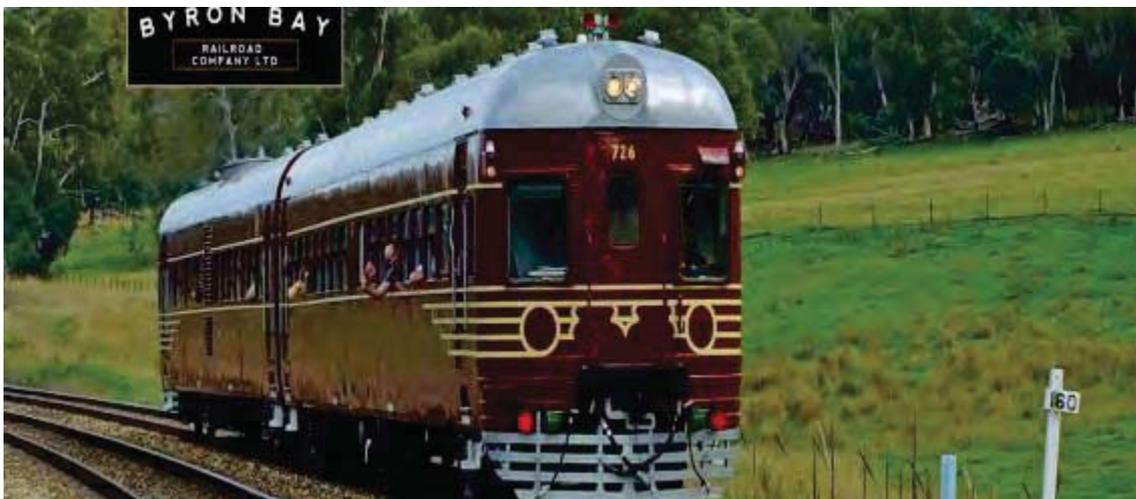


Figure 34 – Source: *Byron Bay Railroad Company*

Committed initiatives (0-10 years)

- TfNSW provides funding to Transport Heritage NSW to run heritage rail tours and to support other operators in the sector
- The disused rail line between Rosewood and Tumbarumba is being converted into a rail trail. The project is a pilot for potentially many more similar projects across NSW

Initiatives for investigation (0-10 years)

Option	Timeframe
Enable additional public bike share in inner Sydney, Parramatta and Newcastle	0-5 years
Work with Destination Networks, six regional tourism entities developed to facilitate visitor economy growth at the local level, to guide cooperative destination development and marketing initiatives in each region	0-5 years
Connect with tourist operators to have organised tours using trains, including designated carriages for groups with interpreter	0-5 years
Open underutilised assets for tourism-related uses, like rail trails or tourist trains	0-5 years

Servicing visitor demand

Public transport is integral to the NSW visitor experience, as it enables visitors to access popular attractions, in addition to being an attraction in itself

The new Cross-Harbour ferry route will link popular tourist locations from Watsons Bay to Barangaroo and Pyrmont, with visitors able to reach many of Sydney's top attractions whilst enjoying a spectacular journey. We will continue to add more public transport services to popular areas in Greater Sydney to make it easier and more convenient for visitors to enjoy them.



Figure 35

More Trains More Services

The NSW Government will invest more than \$1.5 billion to 2021 on the More Trains, More Services program, which will boost capacity through hundreds of extra services, better infrastructure and new trains for Sydney.

We're adding more than 750 new train services to our weekend timetable, moving Sydney closer in line with public transport offerings in other global cities during off-peak times.

Already there are more than 4,000 additional seats on Blue Mountains trains every weekend, with a doubling of capacity on six weekend Blue Mountains services from 4 to 8 carriages. An additional 24 new express services between Sydney and the Blue Mountains are planned on weekends. Dedicated 8-car express tourist trains will cut travel times by around 20 minutes.



Figure 36

Committed initiatives (0-10 years)

- Sydney Ferries Summer timetable - additional services to help customers get to key destinations across Sydney Harbour during the busy summer peak period
- New Cross-Harbour ferry route to connect key visitor destinations
- Service improvements on bus routes that serve visitor destinations like the Northern Beaches B-line, including more frequent services with double decker buses that will provide great views from the top deck
- Additional train services to the Blue Mountains on weekends and peak visitor times

Initiatives for investigation (0-10 years)

Option	Timeframe
Improve connections/services in off peak, weekend, Public Holidays	0-5 years
Aligning services to meet and increase demand for key visitor locations as new train, coach and ferry fleets come on line	0-5 years
Improvements to information, wayfinding and public transport services to top ten tourism destinations in Sydney and regional NSW	0-5 years
Work with private regional airline, coach, ferry and train operators to meet and drive demand for visitor destinations across the state	0-5 years
Extend NSW TrainLink service frequency to regional tourist destinations	0-5 years
Investigate new ferry wharves in high demand locations	0-5 years

Regional coach and rail

Our regional trains and coaches enable visitors to reach most parts of NSW, from small towns to regional centres

More than 500 new intercity train carriages will replace our older trains, providing long-distance customers a more comfortable travelling experience.

We will investigate providing faster train services to Newcastle and Wollongong. In addition, the regional train fleet will be replaced with a new fleet with improved amenities. We will refocus the regional transport network to link towns with regional cities rather than being Sydney-focussed. We will investigate convenient public transport arrival and departure times, providing day return services to regional cities and centres, and reducing regional train journey times.



Figure 37

Committed initiatives (0-10 years)

- A new regional NSW fleet will replace the ageing XPT, Xplorer and Endeavour trains for passengers who travel between Sydney, Melbourne, Brisbane and major regional centres
- A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast

Initiatives for investigation (0-10 Years)

Option	Timeframe
Update the Sydney City Centre Access Centre Strategy to reflect changing development and transport networks, as well as determine coach parking requirements throughout the Sydney CBD, in key visitor precincts and around hotels	0-5 years

Supporting the late night economy

Public transport enables visitors to enjoy our nightlife and special events, by letting someone else do the driving

The NSW Government is committed to growing a vibrant, safe and strong night-time economy for residents and visitors to Sydney, Newcastle and other large regional cities. We will enhance our night bus network, adding new routes and services, especially on Friday and Saturday nights. We will enable 24/7 public transport access to Sydney Airport with two new overnight bus routes. We will provide more frequent public transport services to major events, and integrate late night bus services with point to point services to provide 'last mile' travel.



Figure 38

Committed initiatives (0-10 years)

New, extended or enhanced all-night bus services on the following routes as part of the Growth Services Plan:

- Route 400 Burwood to Bondi Junction via Sydney Airport
- Route 423 Kingsgrove to City via Earlwood and Newtown.
- Route N20 Riverwood to City via Rockdale, Sydney Airport and Green Square
- Route N81 Parramatta to City via Sydney Olympic Park and Wentworth Point (Thursday-Saturday only)
- Route N91 Bondi Junction to Macquarie Park via Kings Cross, City and Chatswood

Initiatives for investigation (0-10 years)

Option	Timeframe
Extended late night public transport services for workers and visitors – particularly on Friday/Saturday nights	0-5 years
Integrated service to allow late night bus customers to link with a point to point service for the 'last mile home'	0-5 years
Increased frequency of public transport services to precincts and key attractions for mid to large sized sports / entertainment / cultural events	0-5 years
Improved traffic management on Friday and Saturday nights in busy late night precincts	0-5 years

Connecting to key gateways

Sydney Airport

Sydney Airport remains Australia's number one international gateway

Transport service and infrastructure improvements are increasing access to this key national hub of the visitor economy.

Committed initiatives (0-10 years)

- The NSW Government is [upgrading roads around Sydney's Kingsford Smith Airport](#) to improve traffic flow around the airport and Port Botany. The upgrades will also complement Sydney Airport's upgrades to the internal road network
- Additional train services on Airport Line
- Additional bus services to Rockdale and Mascot, to improve connectivity to existing transport services to the Airport
- New separated cycleway connections to Wolli Creek and Mascot stations for staff in the Sydney Airport precinct

Initiatives for investigation (0-10 years)

Option	Timeframe
Improved ability to cross Sydney using street public transport options, including the following routes outlined in Sydney's Bus Future: <ul style="list-style-type: none"> • Suburban bus route between Bondi Junction and Burwood via Eastgardens and Airport • Suburban bus route between Chatswood and the Airport via Sydney CBD and Botany Road • Suburban bus route between Bondi Junction to Miranda via Airport and Eastgardens 	0-10 years
Investigate opportunities provided by the planned ground transport interchange	5-10 years
Work with Sydney Airport as the new Airport Master Plan is developed	0-5 years

Western Sydney Airport

Western Sydney Airport will drive tourism by:

- Adding additional slots in the Sydney basin to grow international tourism markets
- Broadening the options within the Sydney basin for air travel
- Stimulating local nature, sport and event-based tourism, including spurring additional accommodation capacity in Western Sydney and the Blue Mountains.

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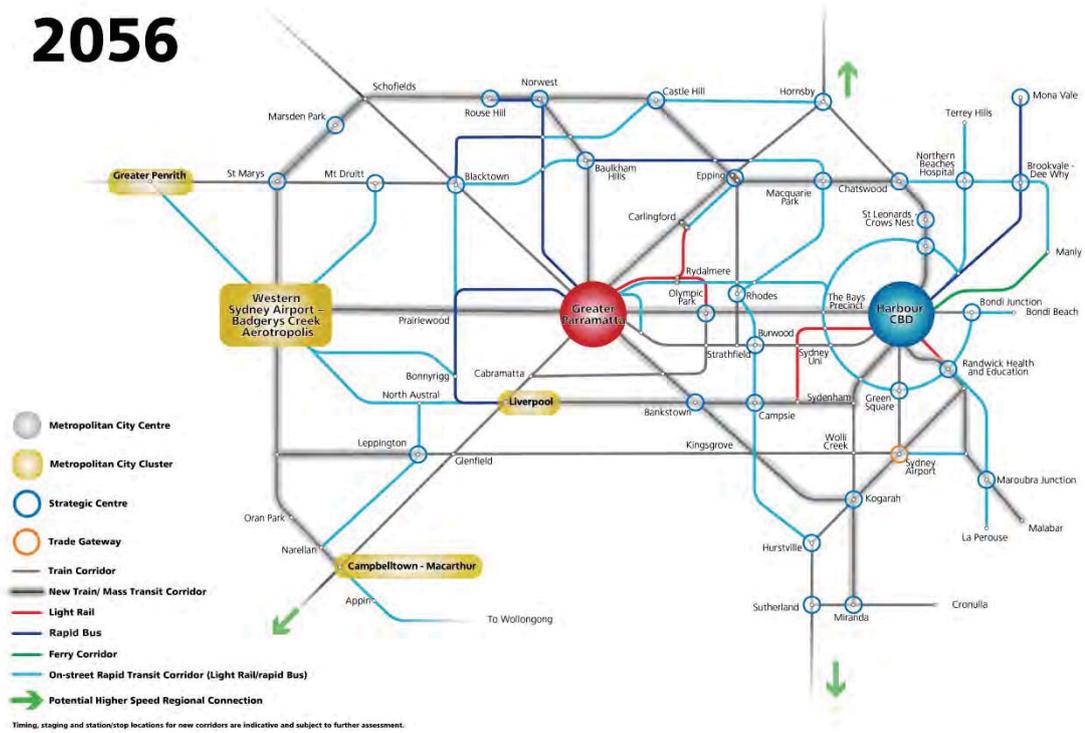


Figure 40

We are currently investigating options for rail and intermediate public transport to service Western Sydney Airport.

Initiatives for investigation (0-10 years, 10+ years)

Option	Timeframe
Plan an integrated transport service offering for Western Sydney Airport with the objective of reducing private vehicle dependency	0-10 years
Work with the future Western Sydney Airport operator on its Ground Travel Plan to outline future transport offering	5-10 years
Deliver integrated transport services to Western Sydney Airport to commence day of opening, and to be further developed over time	5-10 years
WSA-Badgerys Creek Aerotropolis–Parramatta train link (for priority planning in collaboration with the Commonwealth)	0-10 years
North-south train link in Western Parkland City (St Marys to WSA-Badgerys Creek Aerotropolis) (for priority planning in collaboration with the Commonwealth)	10-20 years
Infrastructure to support rapid bus connections between WSA-Badgerys Creek Aerotropolis and Penrith, Liverpool, Blacktown and Campbelltown-Macarthur (for priority planning)	0-10 years

“Western Sydney is full of untapped tourism potential waiting to be realised.”

– NSW Business Chamber

Regional air

Aviation will continue to be an important way to connect tourism destinations across regional NSW. For example, the air routes connecting the holiday destinations of Ballina, Coffs Harbour and Port Macquarie are currently the busiest on the NSW air network. The establishment of a 24-hour International Airport in Western Sydney will enhance access to regional NSW locations, whilst retaining important regular access to Kingsford Smith Airport.

Our focus for the next 10 years will be the development of a ‘hub and spoke’ model, to build the efficiency, accessibility, commercial viability and sustainability of key regional airports and a few smaller but strategically important airports. In particular, we will look to:

- Increase connections from regional cities and centres to interstate destinations as well as Sydney
- Facilitate regional flight access to Kingsford Smith Airport as the main entry and explore opportunities at Western Sydney Airport
- Make landside improvements to facilities through the Regional Airports Program, to upgrade and maintain regional airport facilities
- Connect public transport services with airports and consider timetabling, marketing and ticketing as a holistic product.



Figure 41

Committed initiatives (0-10 years)

- The NSW Government has committed \$70 million for upgrades to 27 regional airport projects that will boost their capacity and safety and increase their ability to attract visitors to regional NSW.



Figure 42

Initiatives for investigation (0-10 years)

Option	Timeframe
Work with the Commonwealth Government and airport operators to facilitate regional flight connections to Kingsford Smith Airport as main entry and explore opportunities at Western Sydney Airport	0-10 years
Support Newcastle, Canberra and Gold Coast airports in their efforts to increase international services	0-10 years
Integrate regional air services with the state's regional passenger transport network	0-5 years
Upgrade regional airports	0-5 years

Cruise ship terminals

The cruise industry is a fast growing sector of the economy. Cruise ships are getting larger and their arrival more frequent

In Sydney, the opening of the Barangaroo Ferry Hub and Wynyard Walk has made ferry access to White Bay Cruise terminal easier. The new Wynyard Walk enables people to easily move between Wynyard Station in Sydney's CBD to Barangaroo King Street Wharf without having to climb stairs or cross multiple roads. Customers can travel to White Bay Cruise terminal from Barangaroo King Street Wharf on a direct, private ferry.

Further afield, we will expand the Eden wharf to accommodate larger cruise vessels. In the longer term, we will manage and facilitate the growth of the cruise industry by implementing a Cruise Development Plan, based on the findings of the Cruise Industry Reference Group. The Plan will include actions to manage the cruise industry development in the short, medium and long-term. At the same time Transport for NSW will investigate options to facilitate better connections to cruise terminals.



Figure 43

Committed initiatives (0-10 years)

- Development of Barangaroo Ferry Terminal to facilitate ferry trips from White Bay to Barangaroo
- \$13m contribution to the construction of a dedicated cruise terminal in Newcastle Bays Precinct Transformation Program
- \$32m contribution to extend Eden Breakwater Wharf to accommodate larger cruise vessels

Initiatives for investigation (0-10 years)

Option	Timeframe
Investigate Transport for NSW related actions arising from the Cruise Development Plan	0-5 years

11. Transport infrastructure

Upgrading transport interchanges and re-purposing assets

Transport for NSW holds many assets with the potential to improve the visitor destination experience and better support the visitor economy

Interchange upgrades across the state are providing better experiences for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

Transport for NSW is also unlocking underutilised assets for use by the tourism sector. For example, ferry wharfs in Sydney Harbour are now open to tourism operators and investigations are underway to open other assets up across the transport network.



Tourism operator using Olympic Park ferry wharf

Figure 44



Map of interchange upgrades across NSW

Figure 45

- Committed initiatives (0-10 years)**
- More than 20 interchanges are currently being upgraded across NSW
 - NSW Boating Now - recreational boating infrastructure delivery program
 - Sharing ferry wharfs in Sydney Harbour with tourism operators

Initiatives for investigation (0-10 years)

Option	Timeframe
Re-purpose regional train stations and rail assets not currently being used for transport for tourist related or commercial uses (e.g. heritage / food & coffee / entertainment tourism / rail trails)	0-5 years
New regional coach terminal at Central Station	0-5 years

Initiatives for investigation (0-10 years)

Improvements to key tourist attractor interchanges like Overseas Passenger Terminal and regional hub interchanges	0-5 years
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Regional roads

The road network is the main way people visit regional destinations

The facilities along and quality of regional roads affect the visitor experience when travelling to regional destinations. Signposting destinations along regional routes and established tourist drives grows local the local visitor economy in towns across NSW.

Recent upgrades to the Pacific Highway have seen a significant increase in visitor numbers along the corridor.

New corridor strategies, regional road upgrades and improved signage to visitor destinations can further enhance the visitor experience, drive more visitors to local destinations and benefit local business.



Figure 46 <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/technical-manuals/touristsignsv4.pdf>

Committed initiatives (0-10 years)

- Tourist signposting to destinations and on touring routes
- Significant investment in regional roads
- Upgrades to regional highways including the Pacific, Princes, New England and Golden Highways, making it quicker and safer to get to destinations and avoid peak holiday period bottlenecks

Initiatives for investigation (0-10 years)

Examples of regional road improvement options	Timeframe
Prepare a Tourist Drives strategy with Destination NSW, to update and refresh tourist drives across NSW	0-5 years
Improve the number and quality of rest areas for tourists in regional areas including accessible facilities	0-5 years
First and last mile road network improvements for regional visitor destinations	5-10 years
Main/High street improvements in regional towns	5-10 years
Prepare a joint NSW-Victoria Tourism strategy for Princes Highway corridor	0-5 years
Support a wider number of national park destinations in areas of high national park use through investment in road infrastructure, including sealing dirt roads	0-5 years

Promoting regional bicycle tourism

NSW has a 3100 kilometre network of non-operational rail lines that can be redeveloped to deliver social and economic benefits for regional NSW

In regional NSW, surplus rail assets are now able to be converted into Rail Trails, attracting visitors seeking to explore NSW regions by bicycle.

The first Rail Trail will run from Tumbarumba to Rosewood, in the picturesque Snowy Valleys Way, an already popular tourism destination.

Conversion of the 22-kilometre disused rail track into a sealed and smooth bitumen path will be ideal for a variety of recreational pursuits for all ages and abilities, while helping to preserve the natural environment and local heritage, and supporting local communities.

More than 300 local walking and cycling projects are delivered in partnership with councils across NSW each year, including the Cycling Towns program, which is

completing cycling networks in regional towns and providing cycleway signage to benefit visitors and residents. Recent cycling towns include Forster-Tuncurry and Orange.

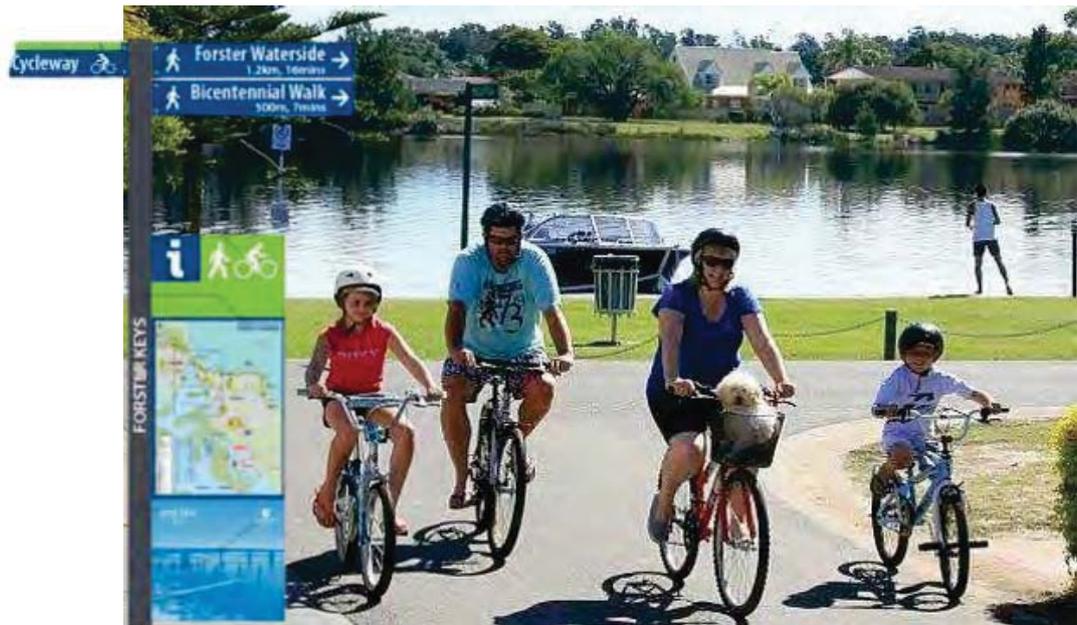


Figure 47 – Forster-Tuncurry cycling towns investment

Committed initiatives (0-10 years)

- Cycling Towns - NSW Government investment completing cycling networks in regional centres. Cycling now drawing visitors to Forster-Tuncurry and Orange
- Statewide walking and cycling programs delivering more than 300 local projects across NSW each year
- Tumbarumba Rail Trail pilot being delivered as part of the \$110m Regional Tourism Infrastructure fund

Initiatives for investigation (0-10 years)

Option	Timeframe
Space for bikes on NSW regional trains	0-5 years
Roll out cycling towns program across more NSW regional centres	0-5 years
Expand the cycling tourism fund for cycling touring infrastructure (including rail trails)	0-5 years
Provide bicycle parking / hire facilities in key tourist locations	0-5 years

12. Planning and coordination

Servicing events, festivals and peak holiday times

Events, festivals and peak holiday periods bring many visitors to NSW and support the tourism industry for the benefit of the wider community

Getting visitors to their destinations presents transport and coordination challenges. Transport for NSW works with Destination NSW and event managers to facilitate access to events and provide regional event support. This includes organising additional public transport services during major events like Sydney's Vivid and special services to get to regional events like the annual Elvis Express train to the Parkes Elvis festival and the Broken Heel festival.

The Transport Management Centre is responsible for safely managing travel to major events. The Centre:

- ensures the safe separation of event patrons, participants and volunteers from traffic
- manages the reduced capacity of the road system
- minimises the traffic impact on the non-event community & the emergency services, and
- minimises costs.

We recognise there is more we can do to better coordinate for events, festivals and peak holiday periods and welcome feedback on the initiatives for investigation, as well any other feedback.



Figure 48

Committed initiatives (0-10 years)

- Sponsorship of major events can include transport as part of the event ticket
- Transport management for major events includes additional public transport services
- Sydney Ferries Vivid timetable - additional services to ensure customers can enjoy
- Elvis Express train - special themed service to/from Parkes Elvis Festival annually, packed with event offers
- Regional event support - negotiated exclusive fares and capacity on selected services to identified regional events (e.g. Orange Food Train, Port Macquarie)

Committed initiatives (0-10 years)

- | | |
|---|---|
| <p>Vivid from Sydney Harbour and vantage points around the harbour</p> <ul style="list-style-type: none"> Cooperative campaigns with MojoSurf under formal MOU (including exclusive fares for MojoSurf customers on regional trains) | <p>Beatles Festival, Bathurst 1000, Tamworth Country Music Festival)</p> <ul style="list-style-type: none"> Manage on-water aspects of major aquatic events like New Years' Eve and Sydney to Hobart |
|---|---|

Initiatives for investigation (0-10 years)

Option	Timeframe
Roll out holiday 'park and ride' at more busy holiday destinations	0-5 years
Increase frequency of public transport services to precincts for mid to large sized sports / entertainment / cultural events	5-10 years
Marketing of public transport services to reduce car or taxi usage	0-5 years
Improved transport connections to regional events	0-5 years

Integrating tourism into transport planning

Cooperation with partners in the tourism and transport industry, local government and across NSW government agencies is essential to ensure a seamless experience for visitors and further grow the visitor economy

Creating attractive and vibrant places that are well connected to the transport network will also help boost tourism. A recent example is the plan to upgrade Circular Quay where a decision was made to leverage Government investment to unlock private capital. This will allow a whole-of-precinct renewal that includes retail, dining and entertainment attractions as well as a modern transport interchange.

It is important that tourism needs are incorporated into transport planning as visitors are not accustomed to our transport facilities. Planning for the renewal of the Circular Quay will incorporate tourism needs. We will keep Sydney open for business during construction of transport infrastructure by planning, wayfinding and working with businesses and tourism operators. We will improve access to regional train stations with coaches, point to point services and car hire/car share schemes.



Figure 49 – Artist impression of a possible outcome of the Circular Quay wharfs and precinct renewal program

Committed initiatives (0-10 years)

- Tourism and events considered in the operation of new infrastructure like the CBD and South East light rail
- Planning of Circular Quay precinct renewal incorporating tourism needs
- Keeping Sydney open for business alongside construction disruption: events planning, signage and wayfinding, working with coaches and hotels

Initiatives for investigation (0-10 years)

Option	Timeframe
Increase transport services to serve peak visitor demand in regional areas and on Sydney Harbour	0-5 years
Ease congestion resulting from conflict between pedestrian visitors and commuters at prime tourist attractors e.g. Circular Quay and CBD stations	0-5 years
Precinct Masterplans with integrated services (tourism, transport, services and amenities, etc.) and coordinated across all levels of Government	0-5 years
Encouraging car hire and car share companies to establish offerings at outer metro and regional stations	0-5 years