

# 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.

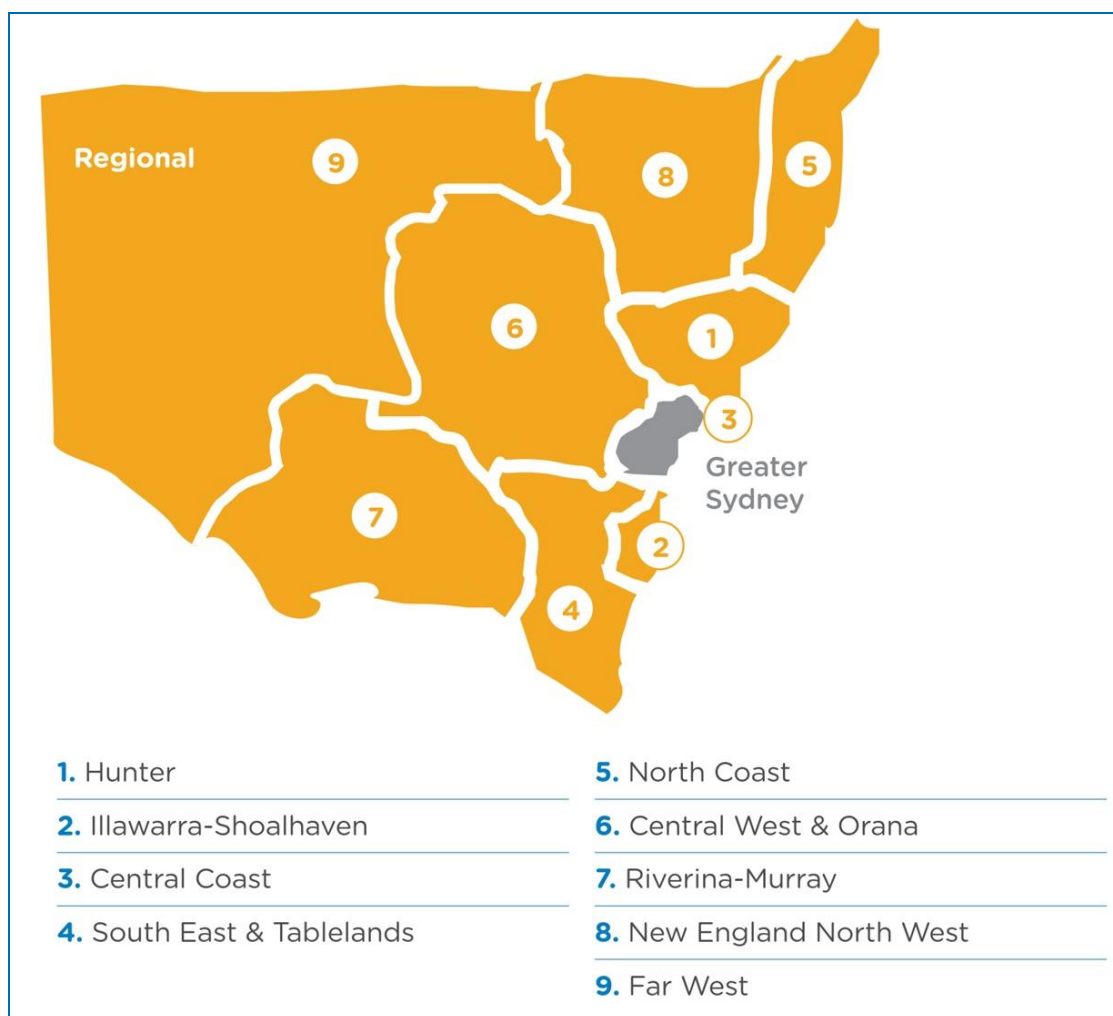


Figure 2: Regional NSW

## 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.



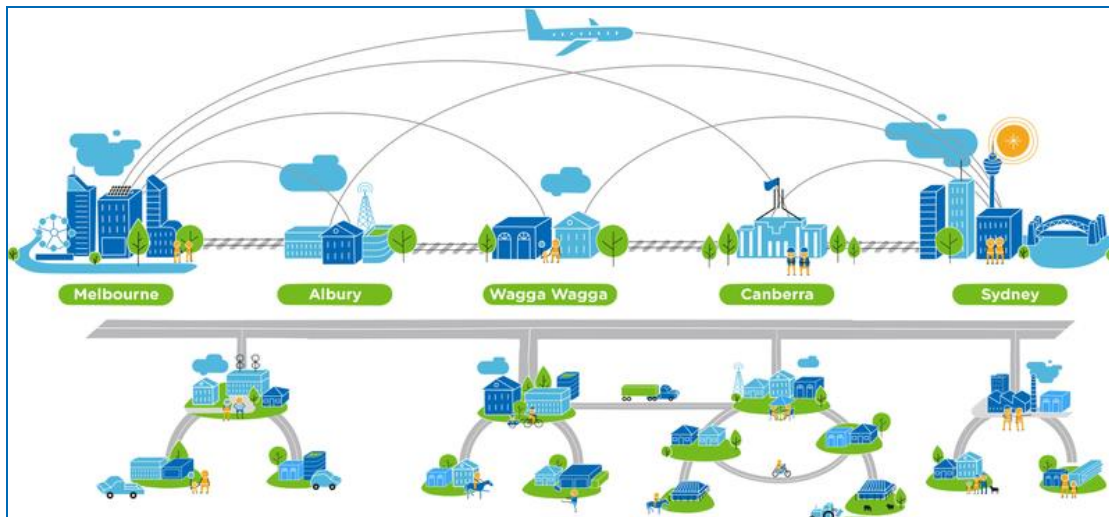


Figure 3: Moving FROM a Sydney-focused network TO a focus on your local Regional City

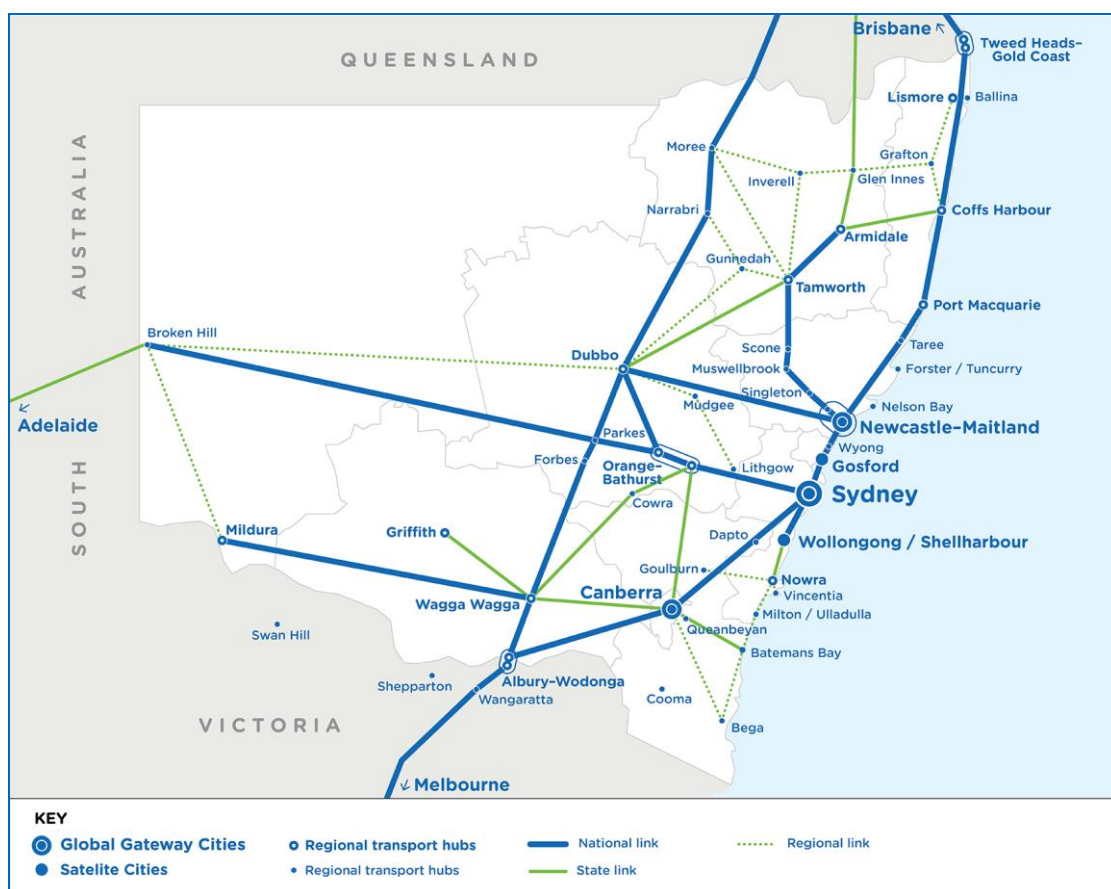


Figure 4: Regional NSW transport network

## 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.

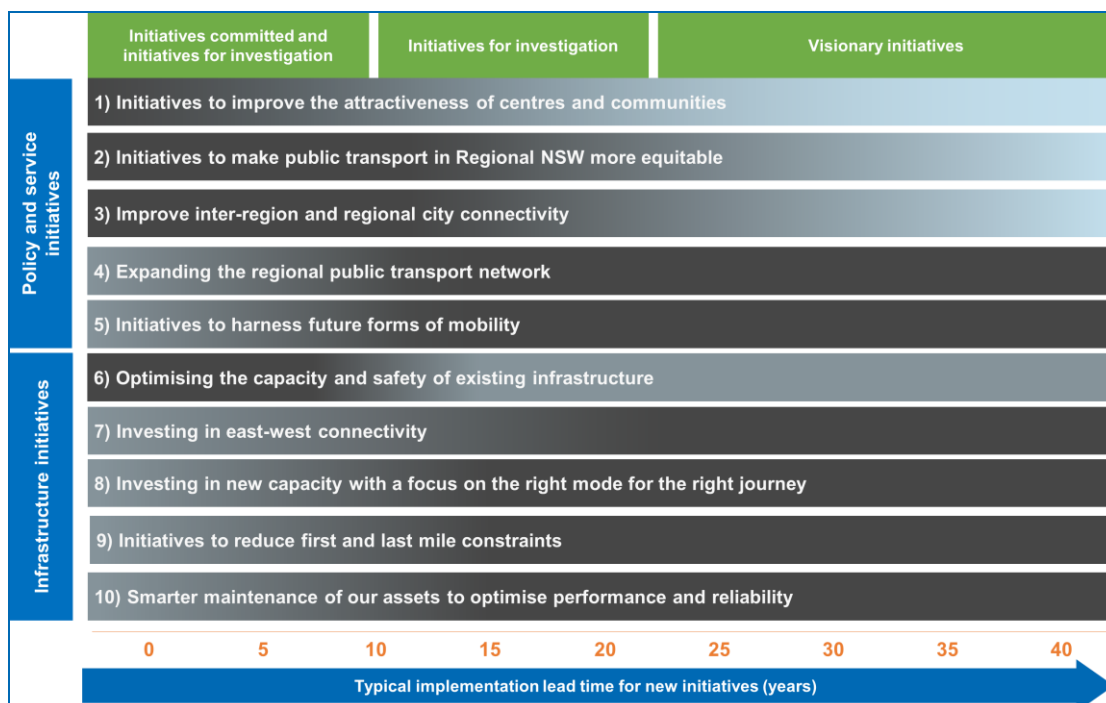


Figure 5: Initiatives to support the customer outcomes

## 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.

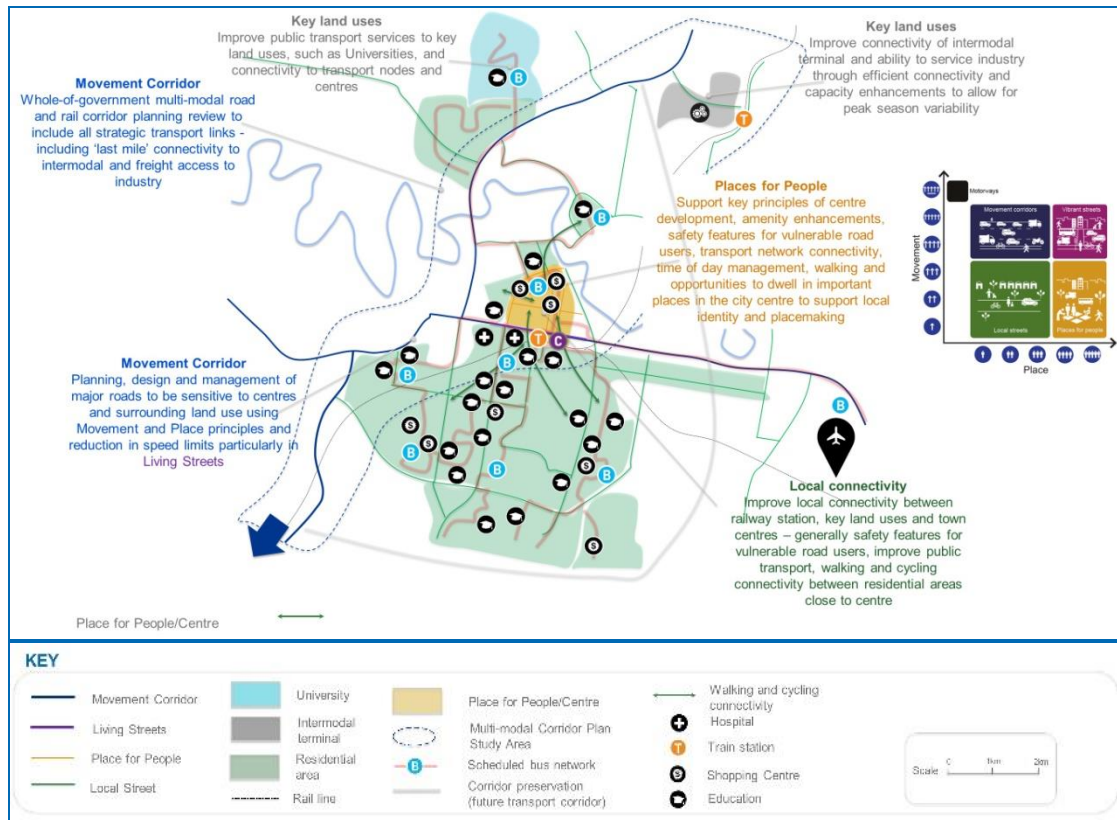


Figure 6: Movement and Place Framework for Regional Cities (Illustrative only)

## 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.

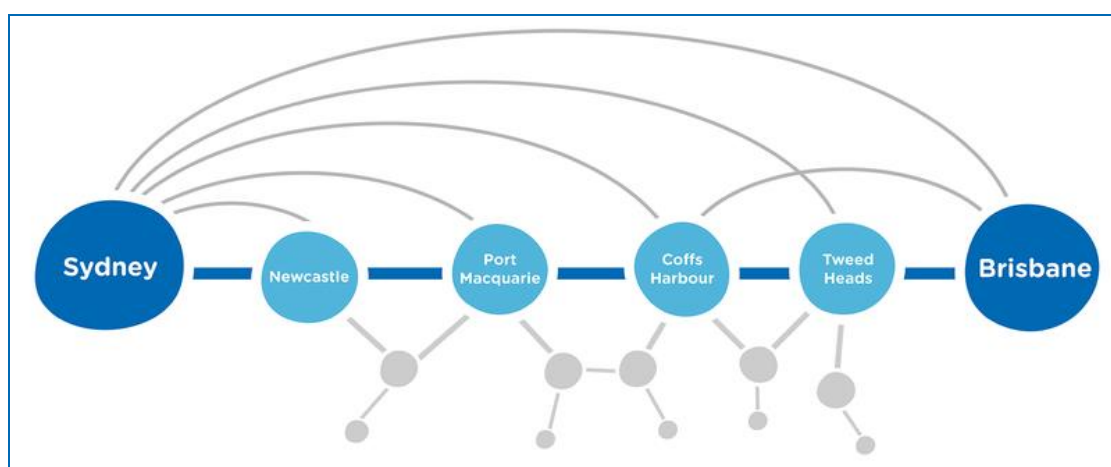


Figure 7: Improving region to region connections



## 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

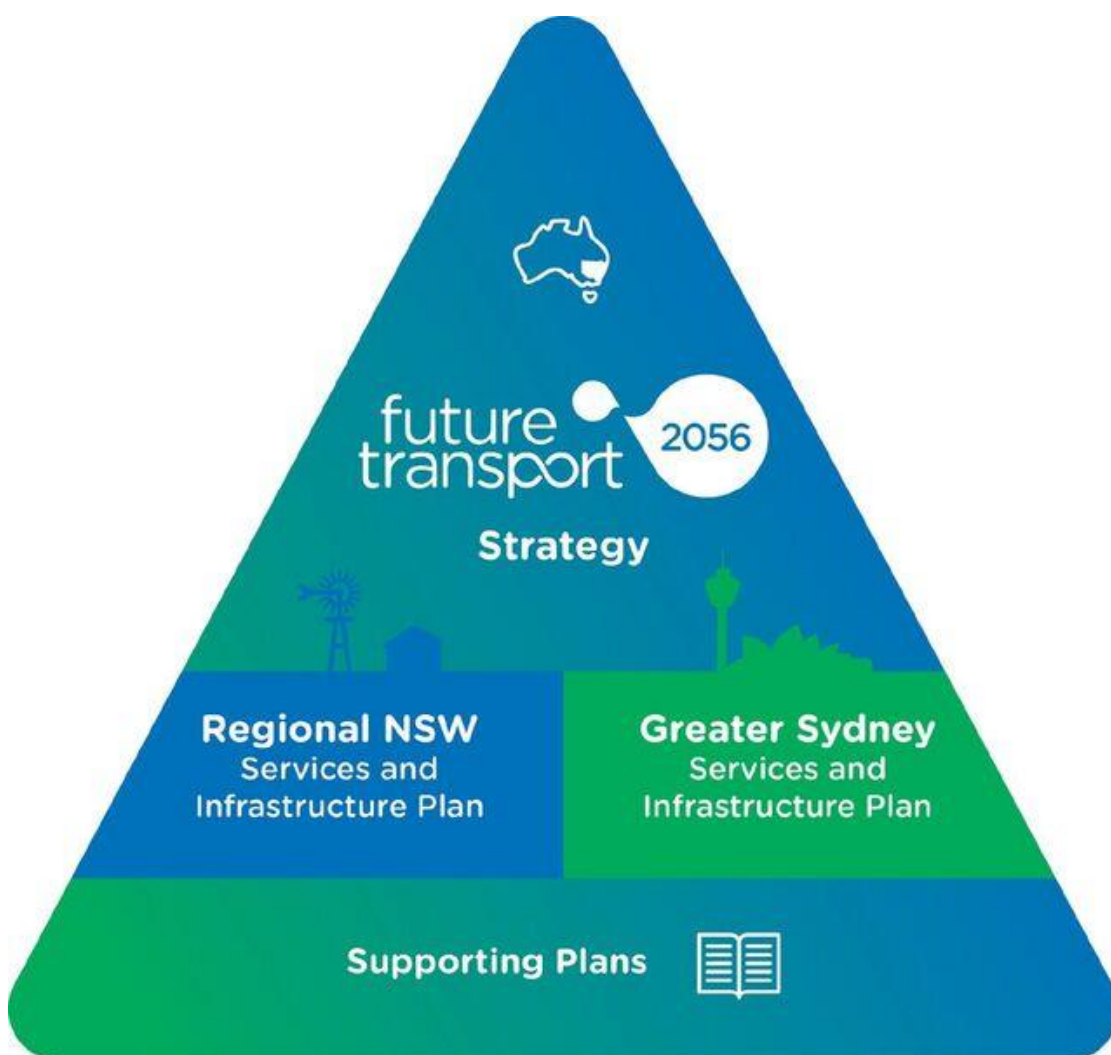


Figure 8: Overview of Draft Future Transport 2056

- 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.

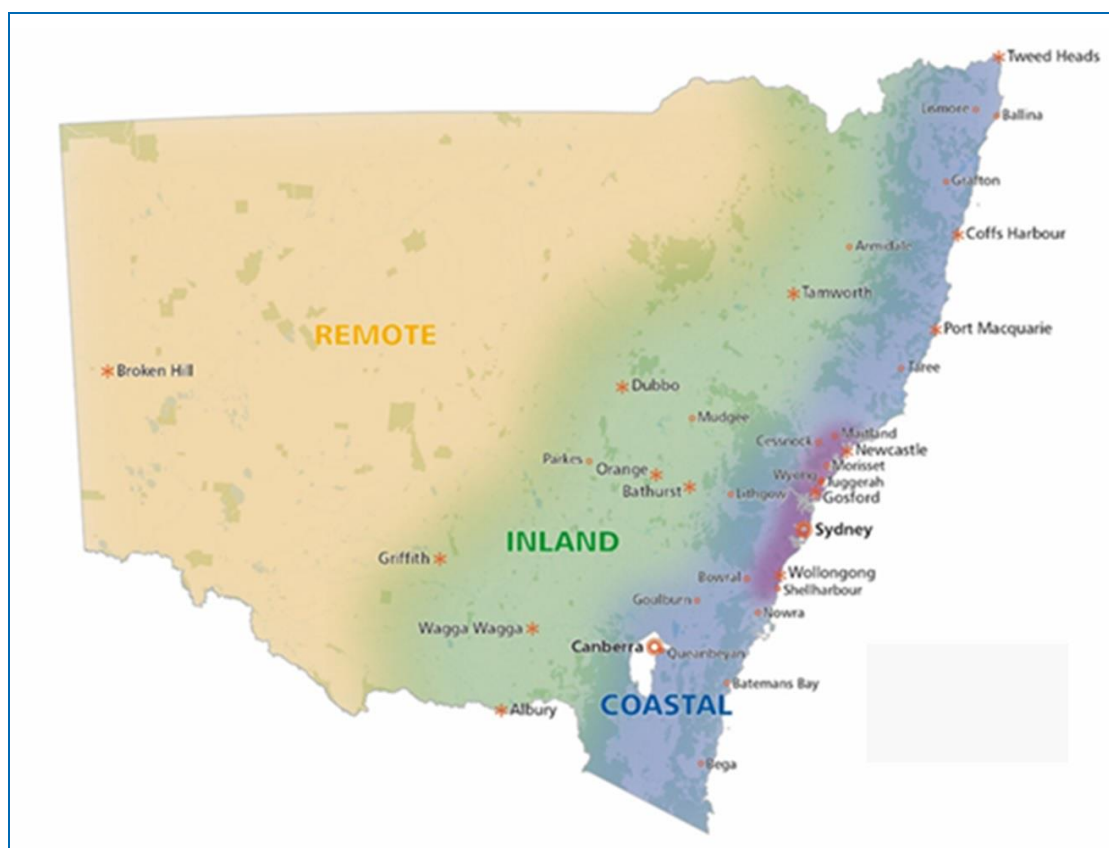


Figure 9: Four geographies of Regional NSW

## 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.

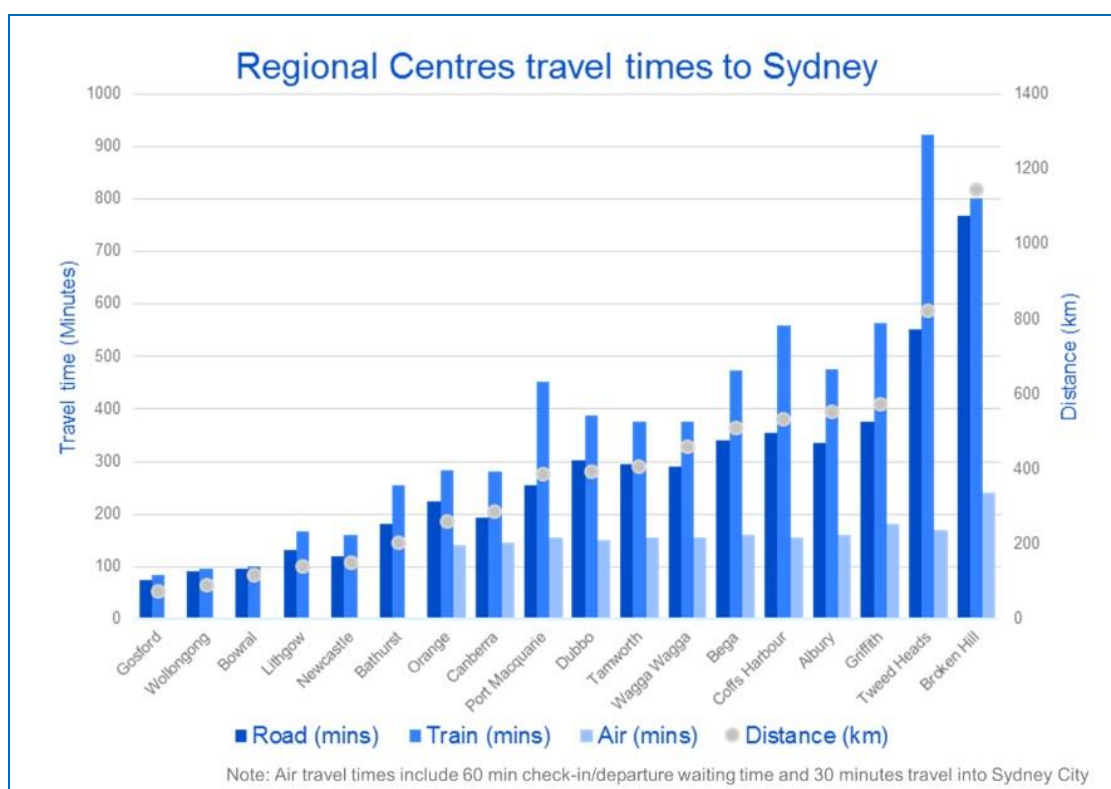


Figure 10: Travel time by mode from Regional Centres to Sydney

## 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.

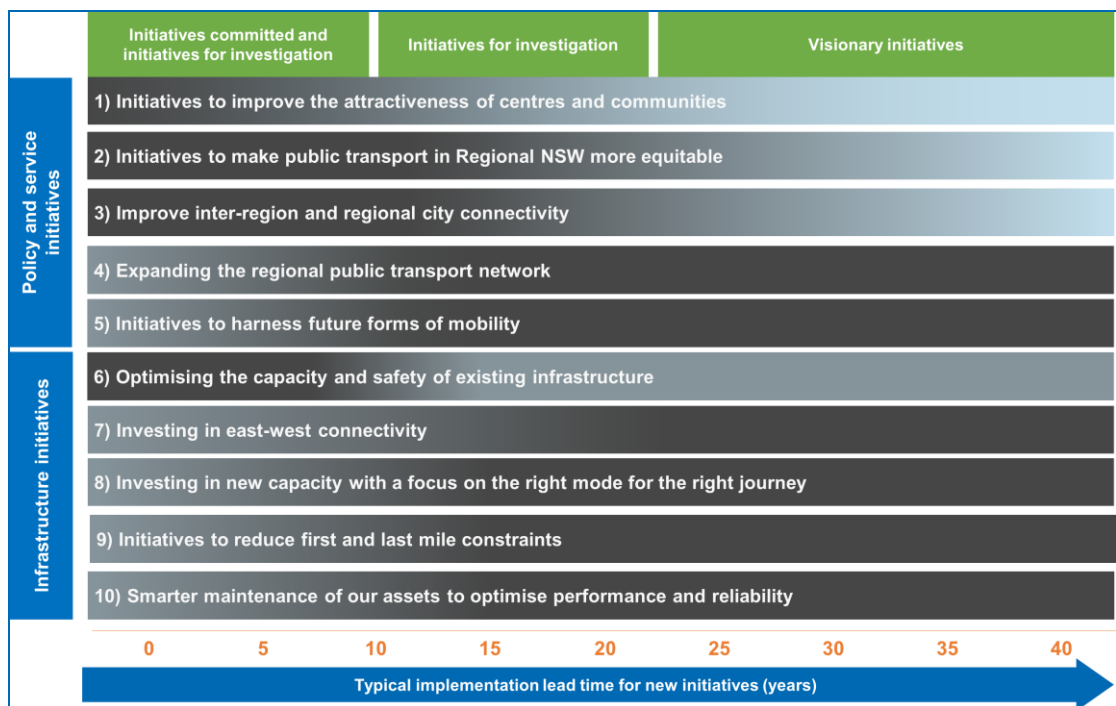


Figure 12: Initiatives to support the customer outcomes



## 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





## **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



## 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

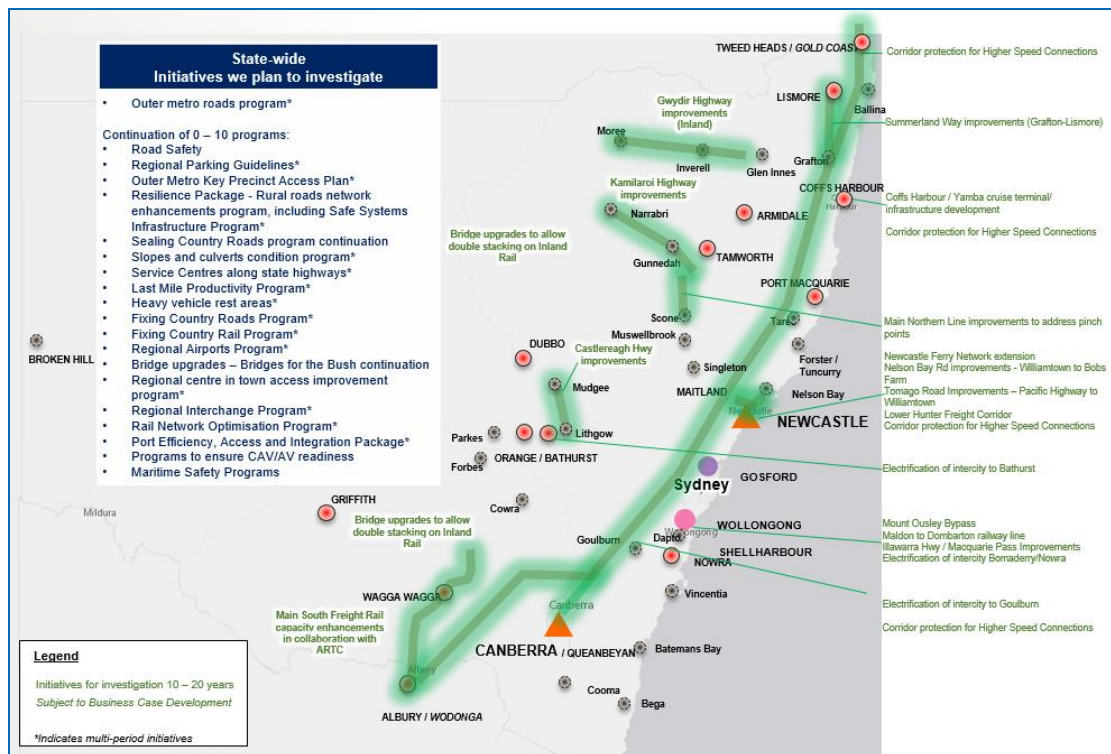


Figure 15: Initiatives for investigation for potential commitment (10 – 20 years)



## 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

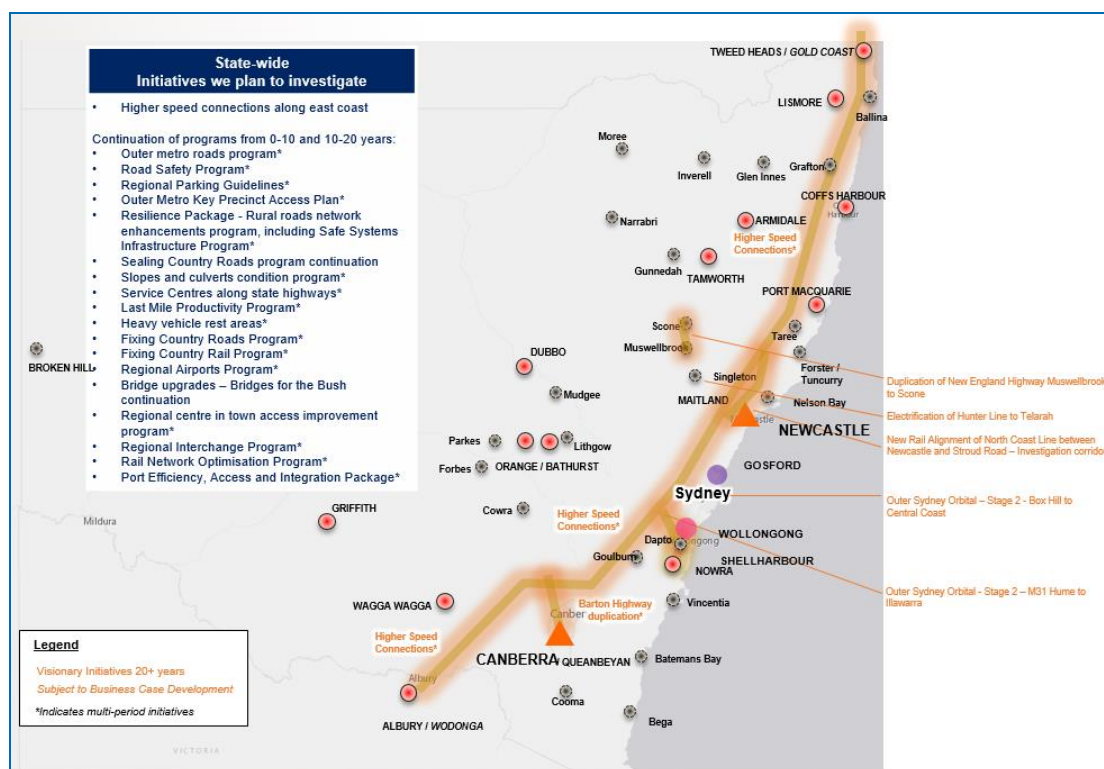


Figure 16: Visionary initiatives for investigation for potential commitment (20+ years)

## 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.

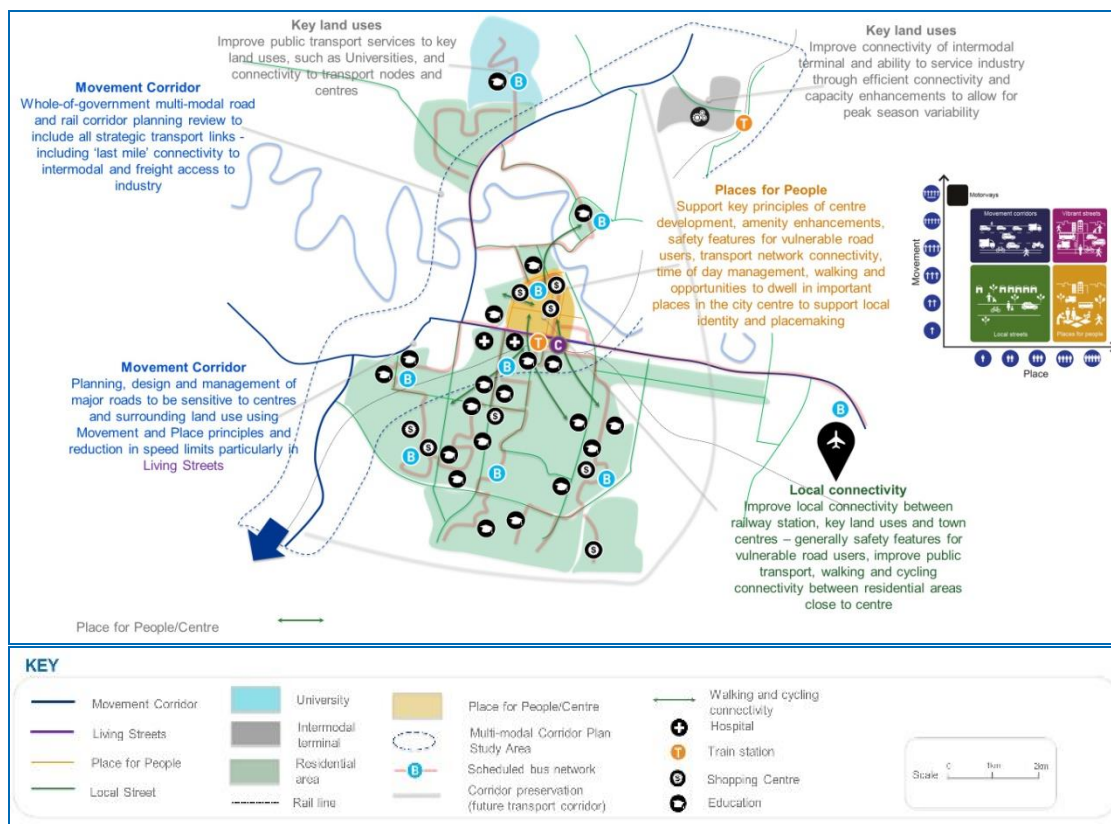


Figure 17: Movement and Place Framework for Regional Cities (Illustrative only)

## 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

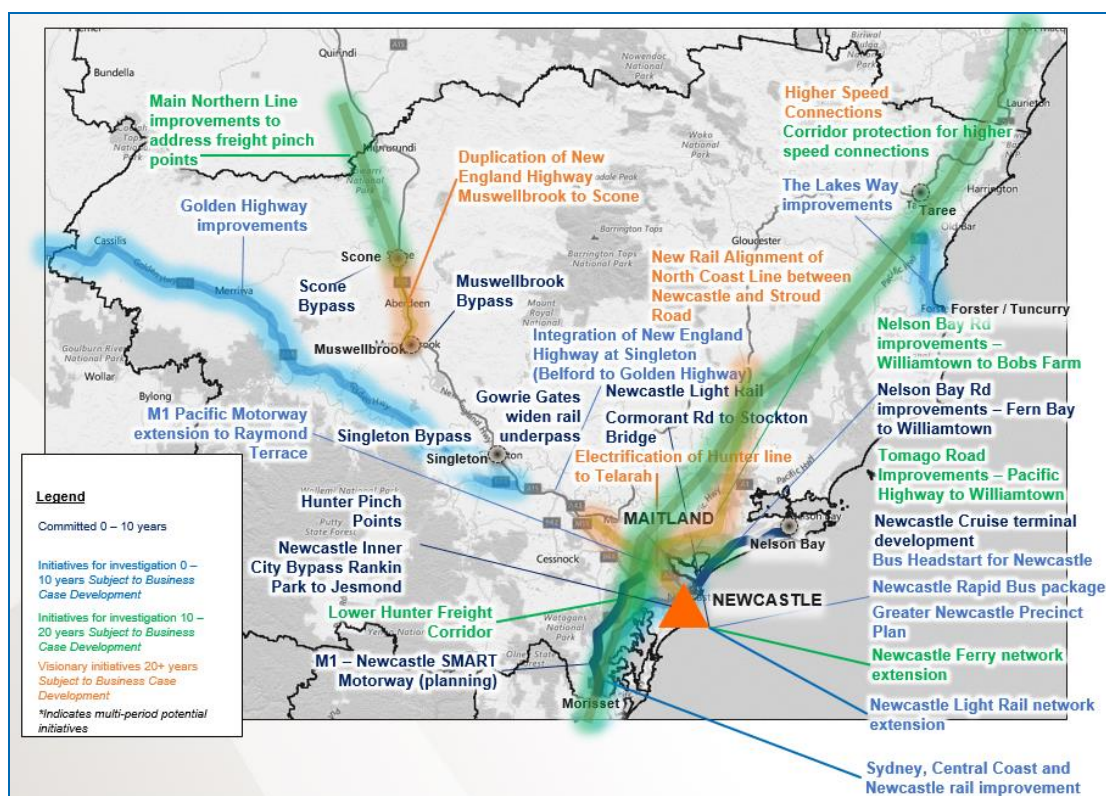


Figure 18: Hunter initiatives for investigation

## 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



## 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

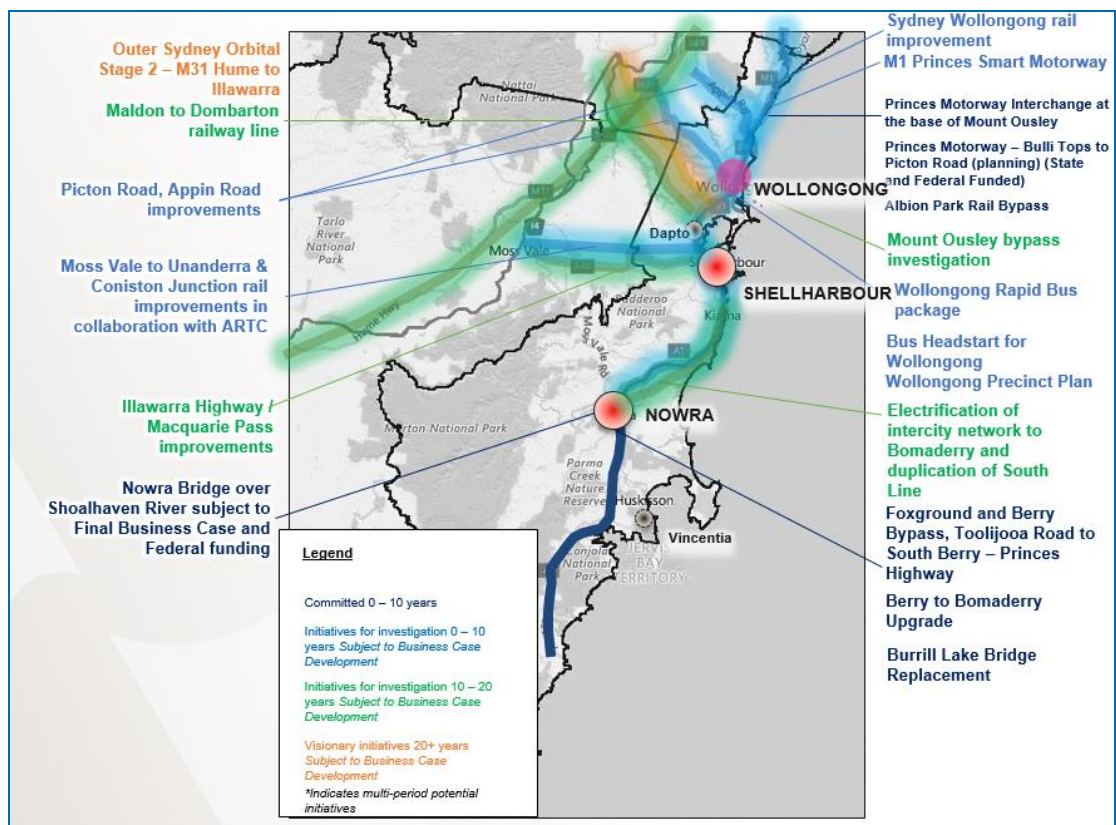


Figure 20: Illawarra Shoalhaven initiatives for investigation



## 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)
- Sportsmans 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

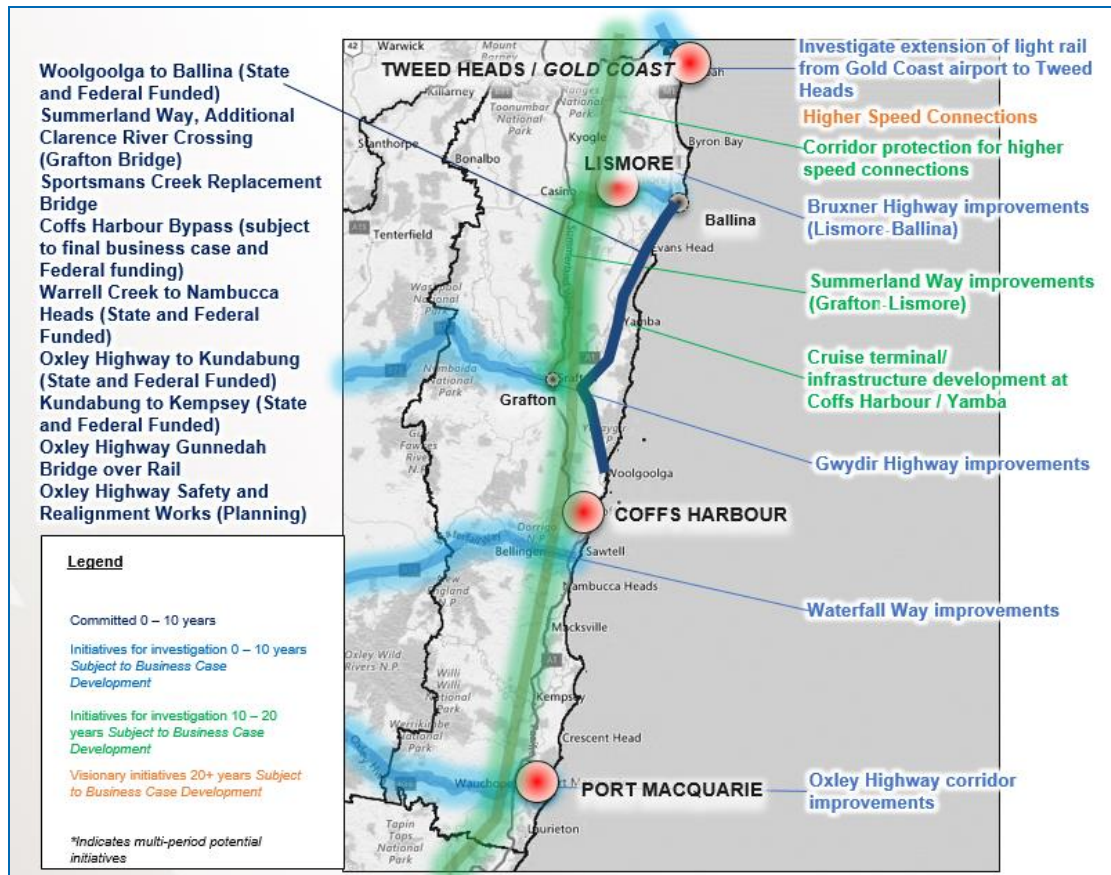


Figure 21: North Coast initiatives for investigation

## 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

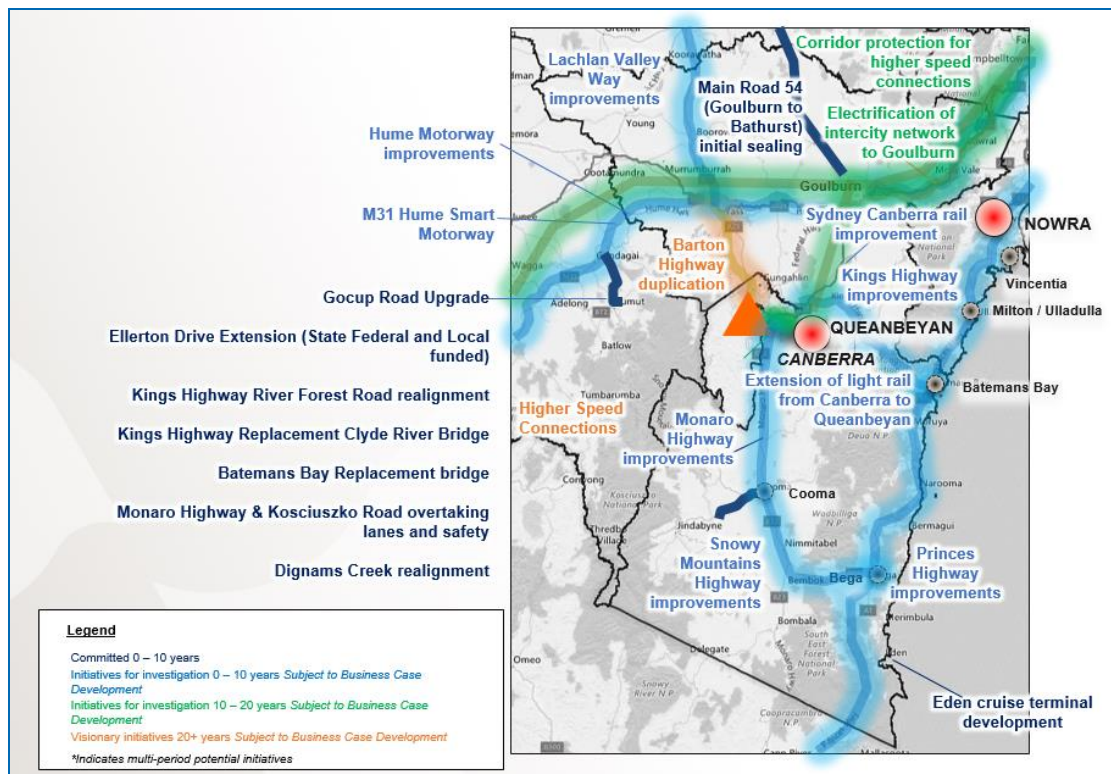


Figure 22: South East and Tablelands initiatives for investigation

## 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



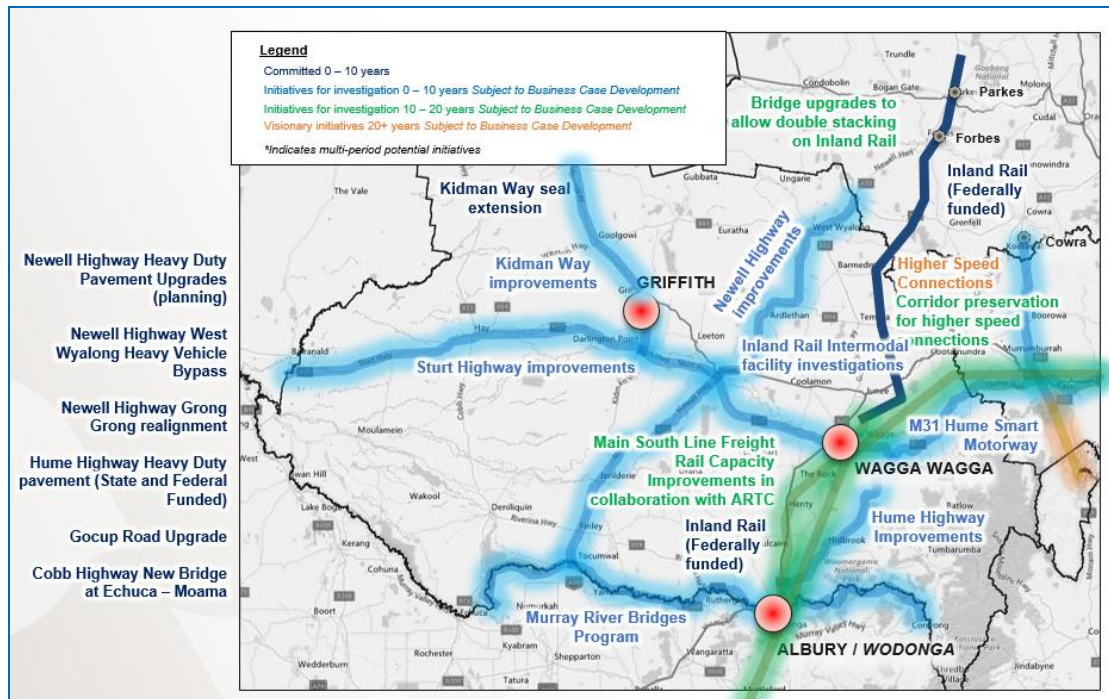


Figure 23: Riverina-Murray initiatives for investigation

## 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



## 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



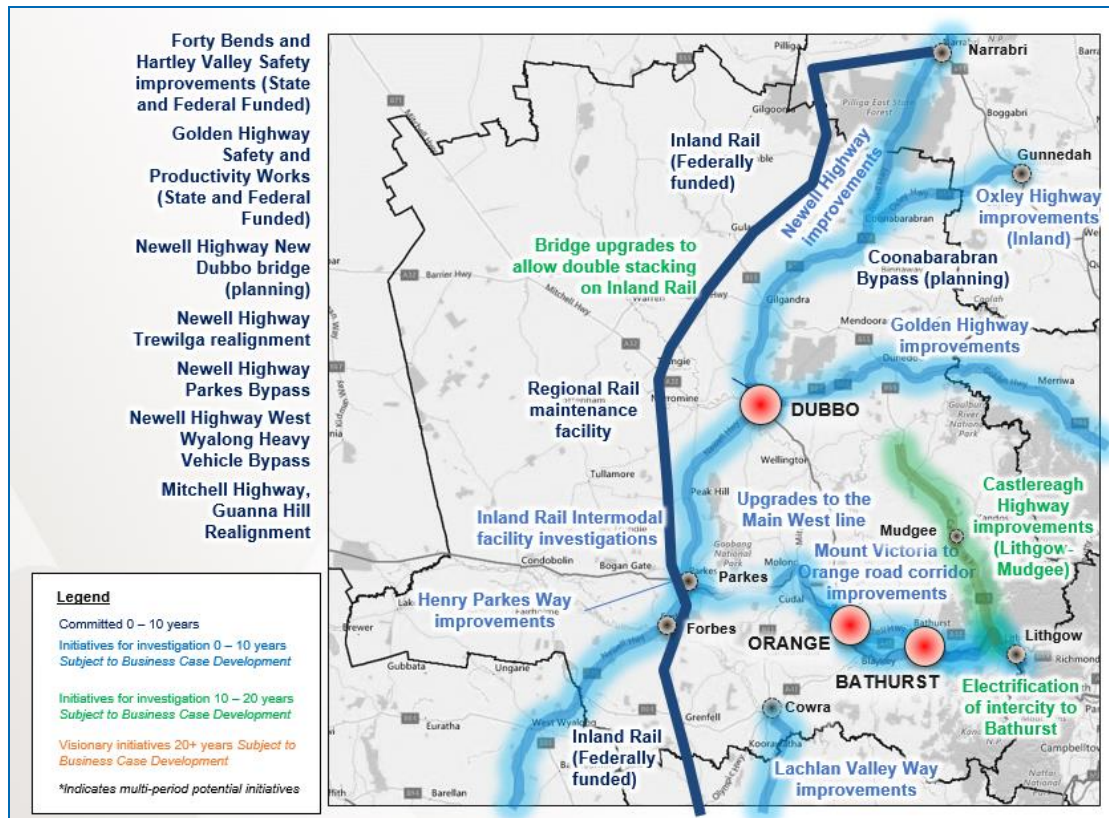


Figure 25: Central West and Orana initiatives for investigation



## 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



## 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

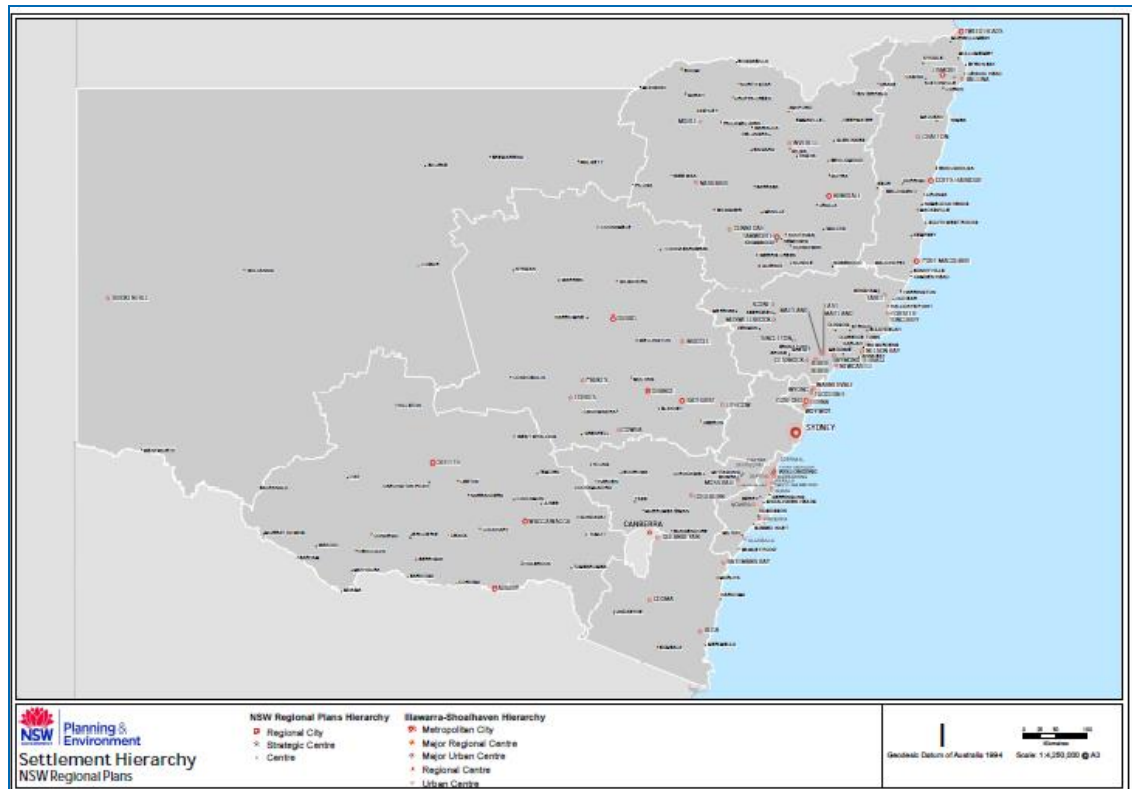


Figure 27: Settlement Hierarchy Regional NSW

## 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**

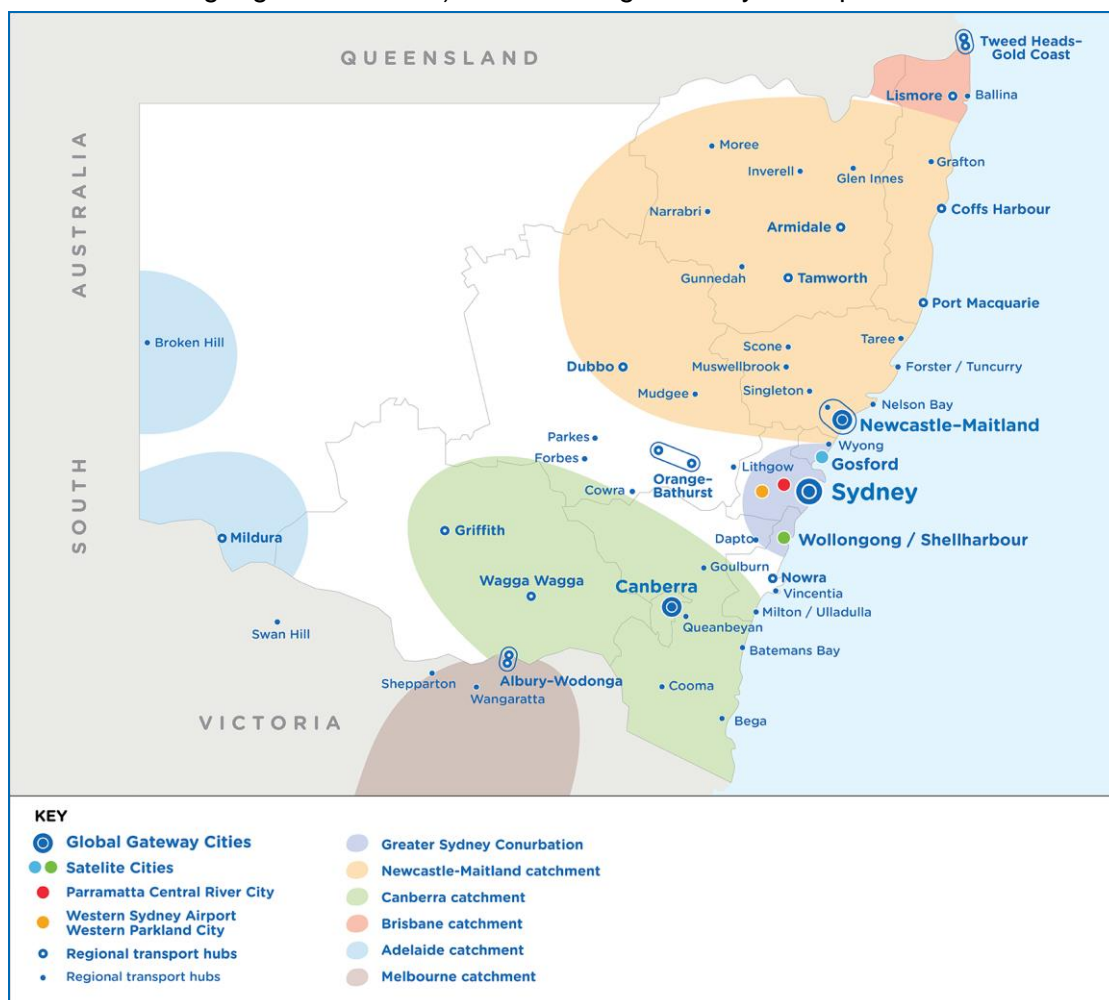


Figure 28: Importance of the Global Gateway Cities

### 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.

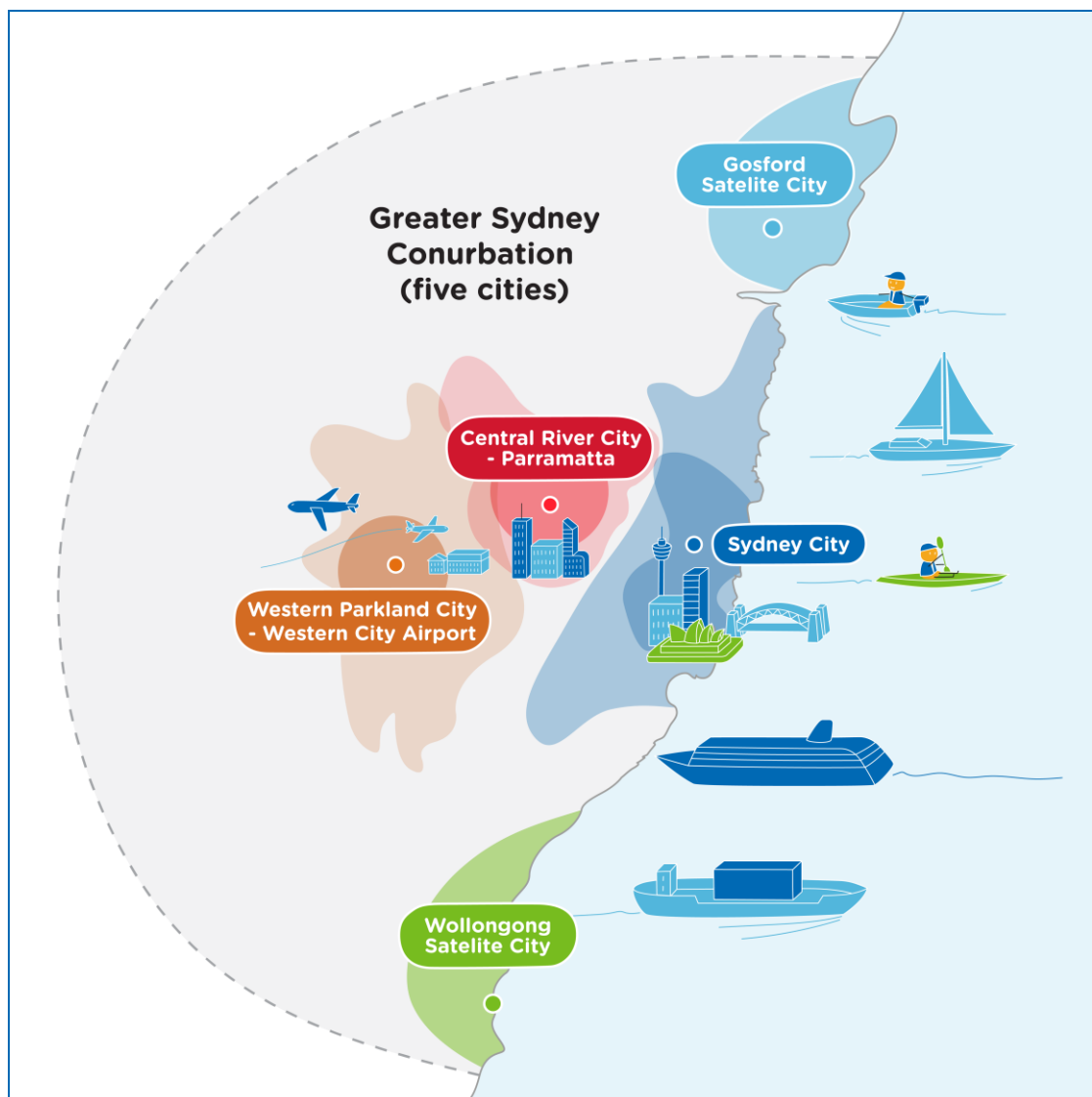


Figure 29: The five metropolitan cities of Greater Sydney by 2056

### 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<br>(Gosford/Wollongong) | 0.63M        | 0.76M        | 0.88M         |
| Greater Newcastle                        | 0.73M        | 0.85M        | 0.91M         |
| Regional NSW<br>(Remainder)              | 1.69M        | 1.84M        | 1.87M         |
| <b>Total (NSW)</b>                       | <b>7.75M</b> | <b>9.57M</b> | <b>11.55M</b> |

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

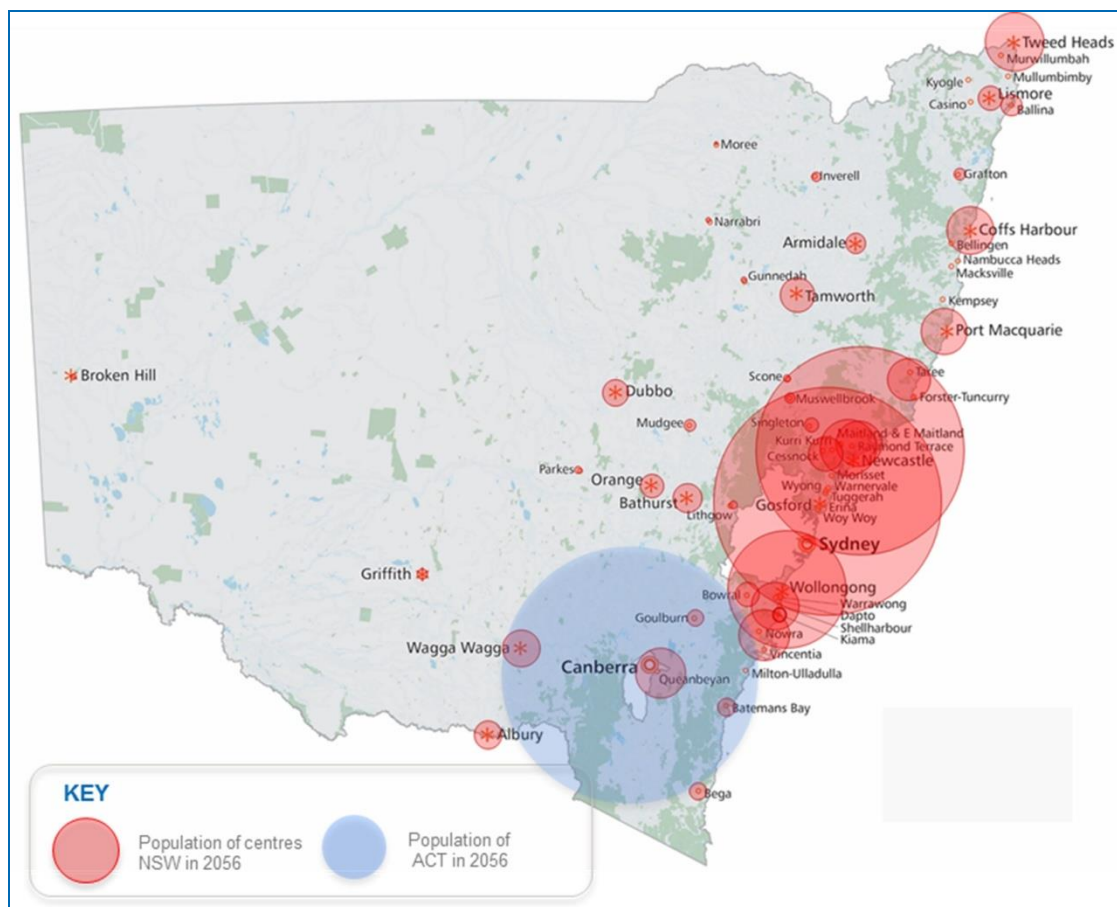


Figure 31: Expected population in 2056

## 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 km<sup>2</sup> of land. Sydney only covers about 12,368 km<sup>2</sup> 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)

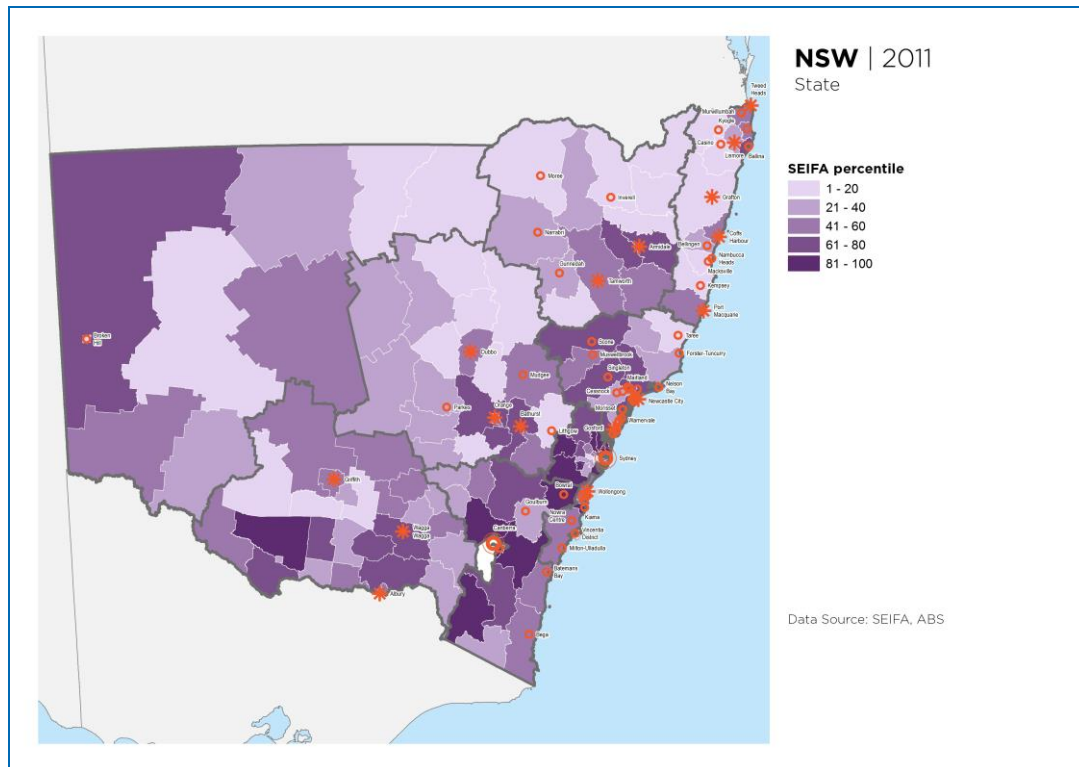


Figure 33: Socio-Economic Indexes for Areas (SEIFA) 2011 (Source: Australian Bureau of Statistics)

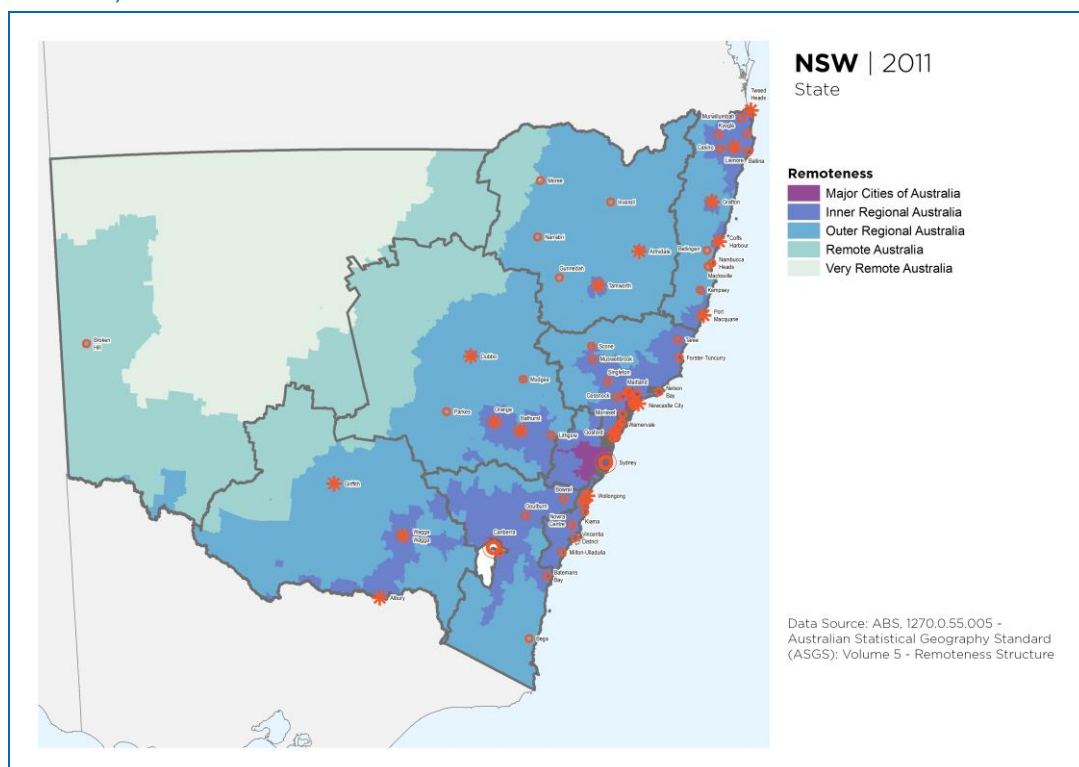


Figure 34: Remoteness (Source: Australian Bureau of Statistics)



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

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

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  |
|---|--|
| <b>North Coast</b>  |  |
| <ul style="list-style-type: none"> <li>• Tourism, Aged care, Health care, Higher education; Fruit and nut growing</li> </ul>  | <ul style="list-style-type: none"> <li>• Upgrade of the Pacific, Oxley, Bruxner Highways; Within centre bus services; Flexible transport; Coffs Harbour Bypass; new Cruise Terminal; Higher speed connections</li> </ul>                                   |
| <b>New England and North West</b>   |  |
| <ul style="list-style-type: none"> <li>• Agriculture; Road freight transport; Higher education; Food product manufacturing</li> </ul>   | <ul style="list-style-type: none"> <li>• Upgrade of the Newell, Oxley, Gwydir, Kamilaroi, New England Highways; Within centre bus services; Inland Rail; Bridge upgrades on Inland Rail; Intermodal terminal</li> </ul>                                    |
| <b>Far West</b>   |  |
| <ul style="list-style-type: none"> <li>• Mining; Tourism; Agriculture</li> </ul>  | <ul style="list-style-type: none"> <li>• Highway Road sealing; Barrier Highway upgrade</li> </ul>  |
| <b>Central West and Orana</b>   |  |
| <ul style="list-style-type: none"> <li>• Agriculture; Food product manufacturing; Road and rail freight transport; Tourism; Mining; Wood product manufacturing; Higher education; Health care; Wine production</li> </ul> | <ul style="list-style-type: none"> <li>• 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</li> </ul>                          |
| <b>South East and Tablelands</b>  |  |
| <ul style="list-style-type: none"> <li>• Agriculture; Tourism; Dairy product manufacturing; Dairy cattle farming</li> </ul>   | <ul style="list-style-type: none"> <li>• Upgrade of the Hume, Monaro, Barton, Snowy Mountains, Kings and Princes Highways; Eden Cruise Terminal; rail infrastructure upgrades; Higher speed connections</li> </ul>   |
| <b>Riverina - Murray</b>  |  |
| <ul style="list-style-type: none"> <li>• Agriculture; Wine production; Food product manufacturing; Higher education; Road freight transport</li> </ul>  | <ul style="list-style-type: none"> <li>• 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)</li> </ul> |

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.

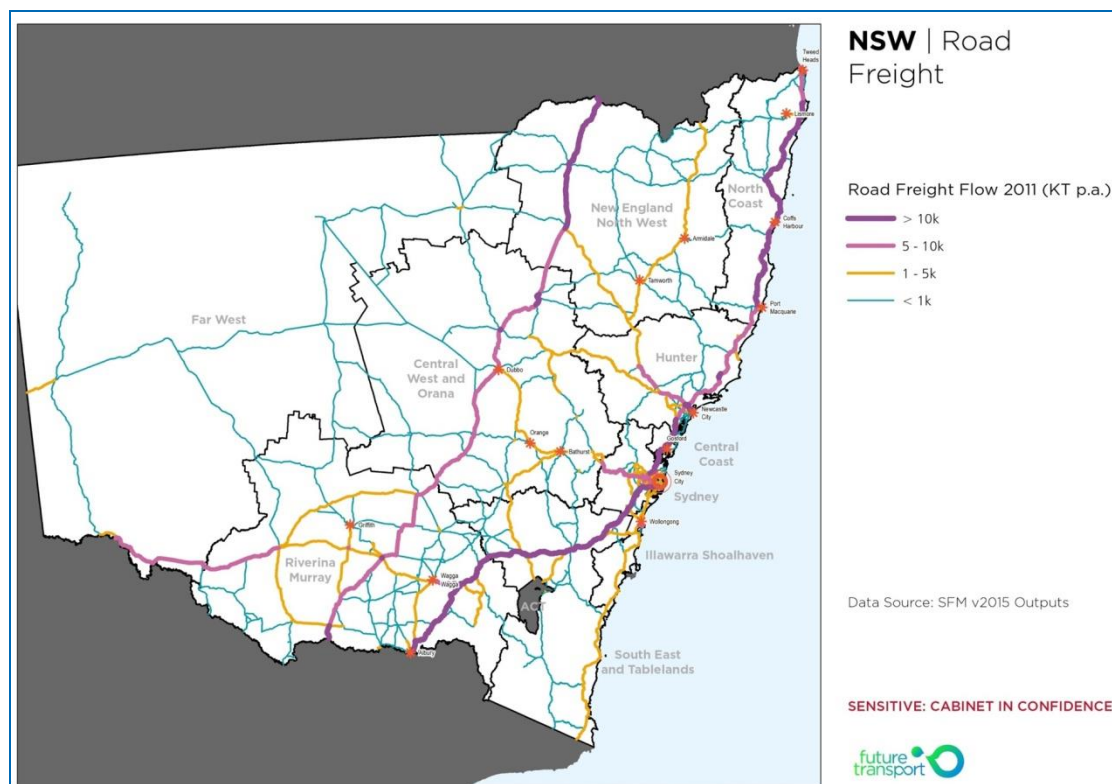


Figure 38: NSW road freight flow 2011 (KT p.a.)

## 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

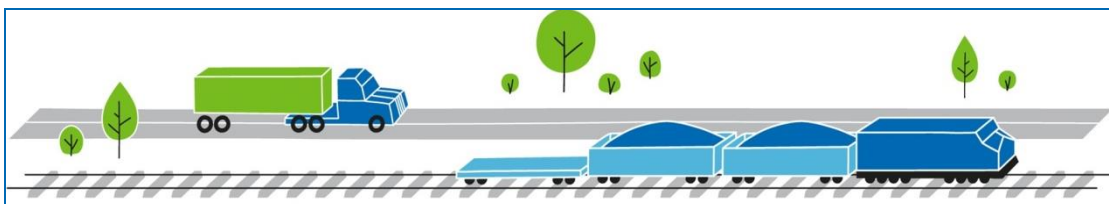


Figure 39: Road and rail freight movement

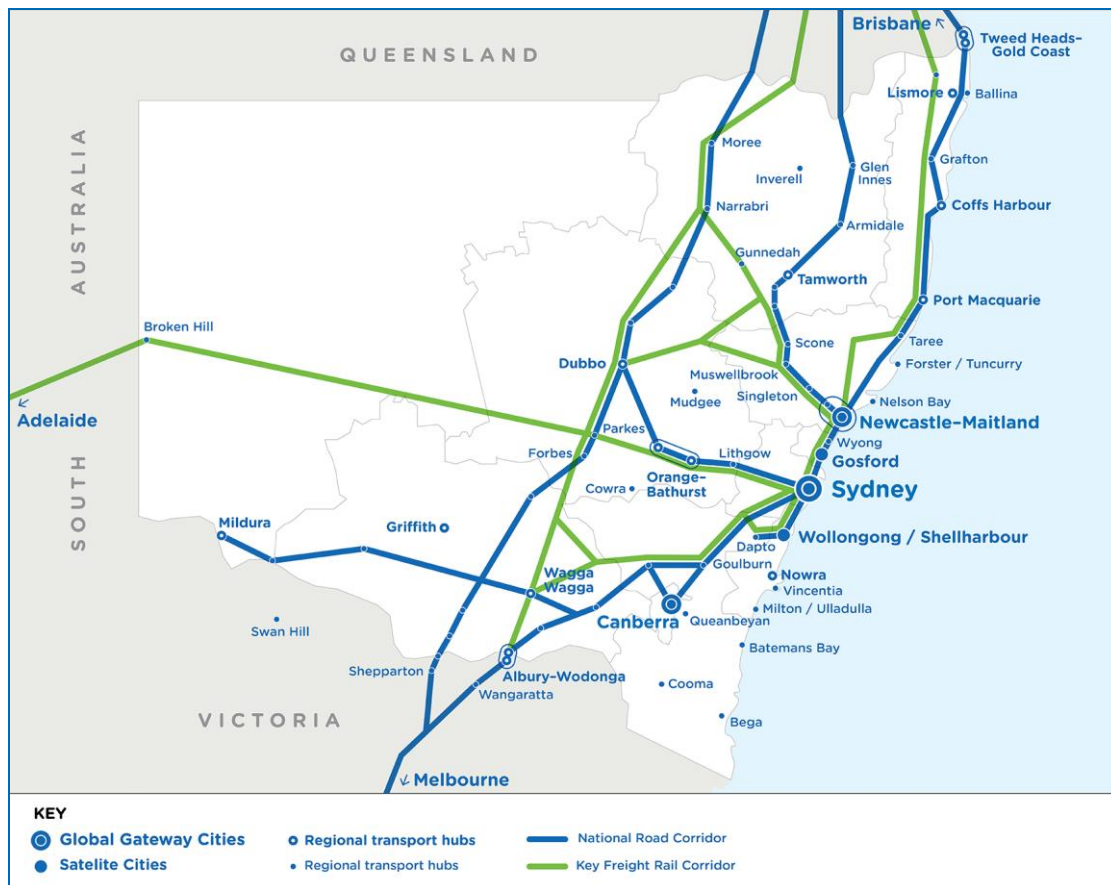


Figure 40: National road and rail links

## 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



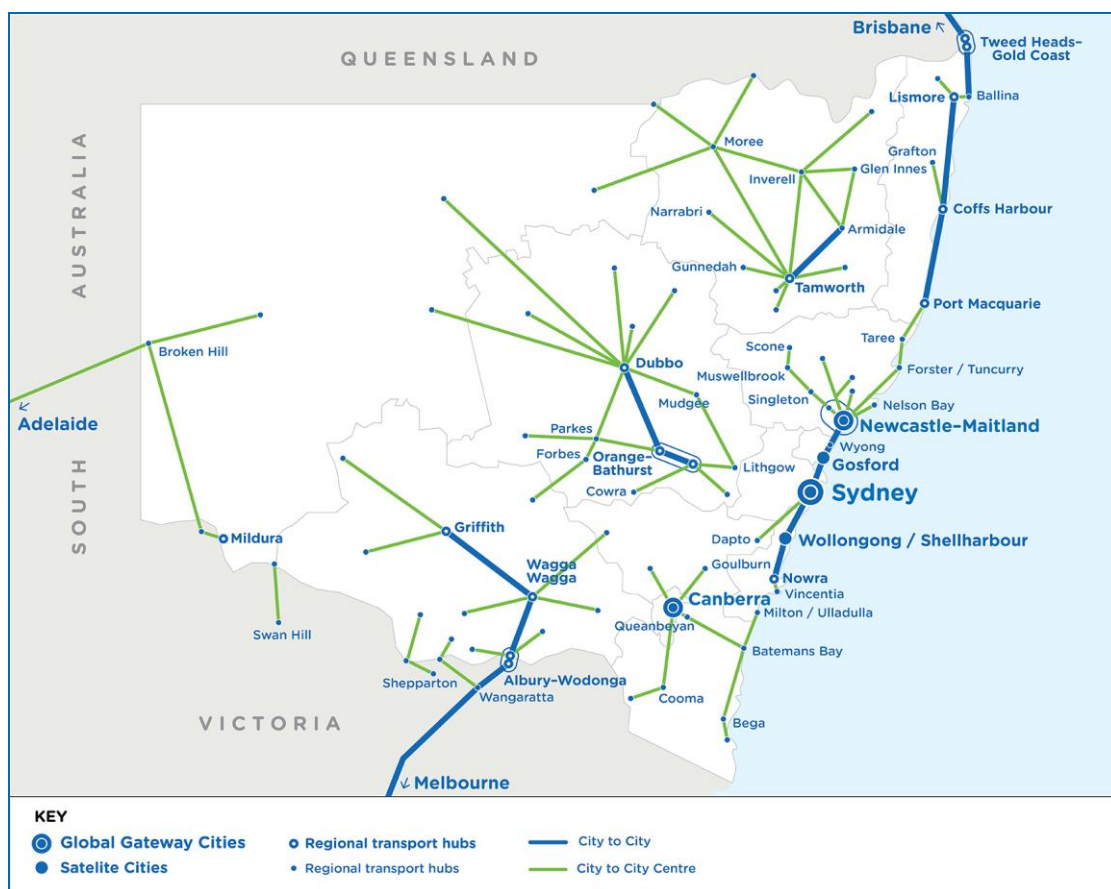


Figure 42: Links to Regional Transport Hubs

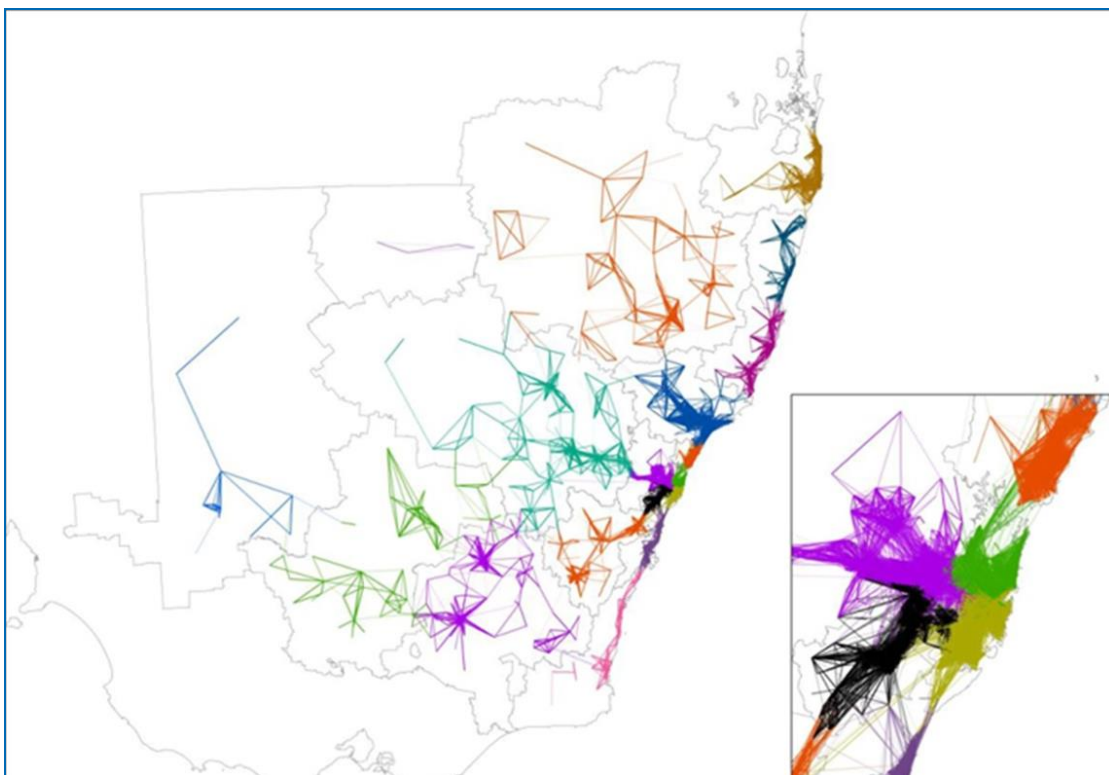


Figure 43: Journey to Work movements (2011)

## 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.

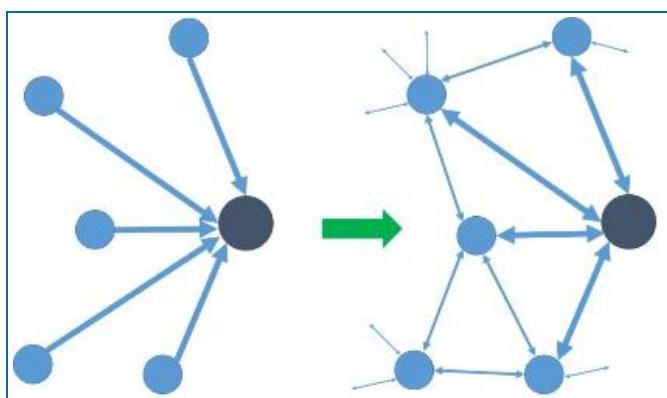


Figure 44: Moving FROM a Sydney-focused network TO a focus on your local Regional City

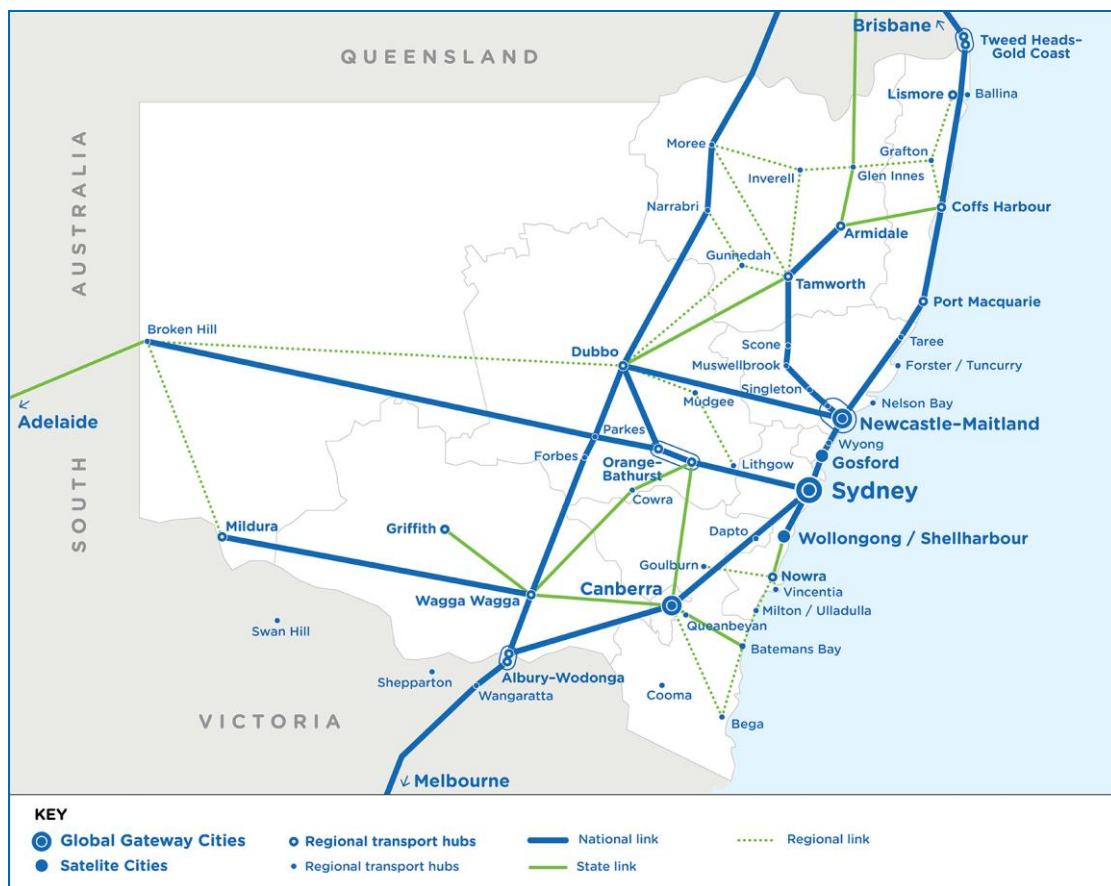


Figure 45: Regional NSW transport network

## 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.

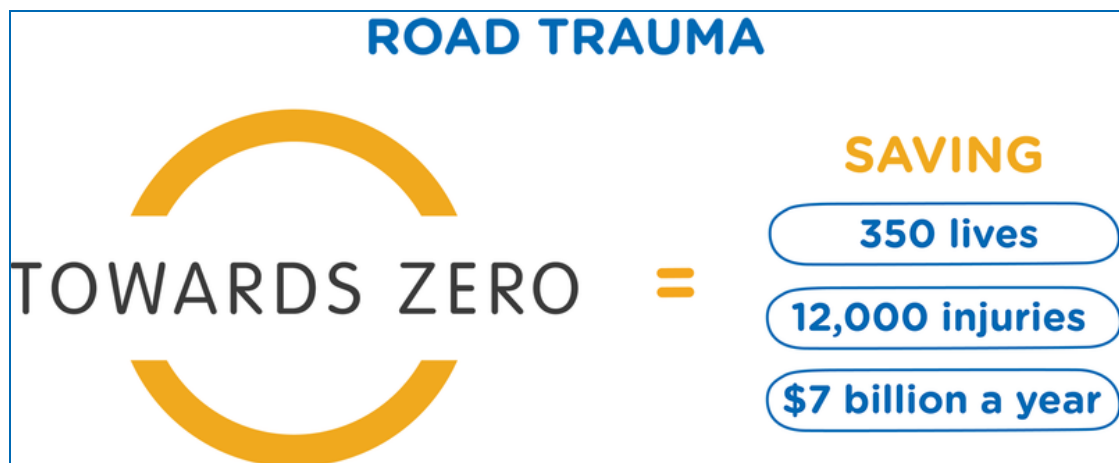


Figure 47: Cost of road trauma in NSW per year

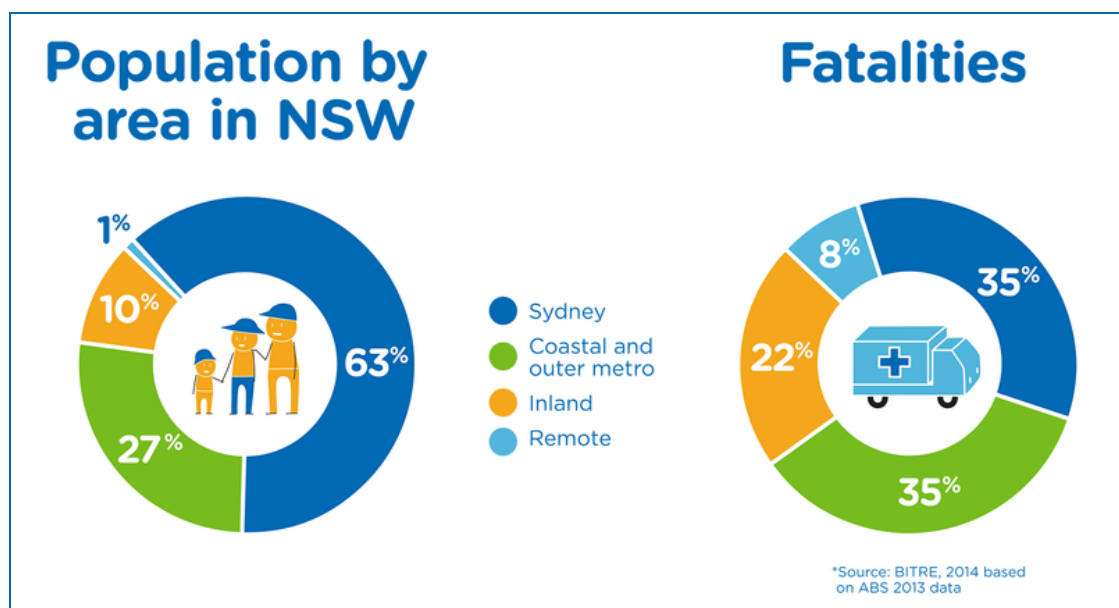


Figure 48: Population and road fatalities by area in NSW (Source: BITRE, 2014 based on ABS 2013 data)



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.

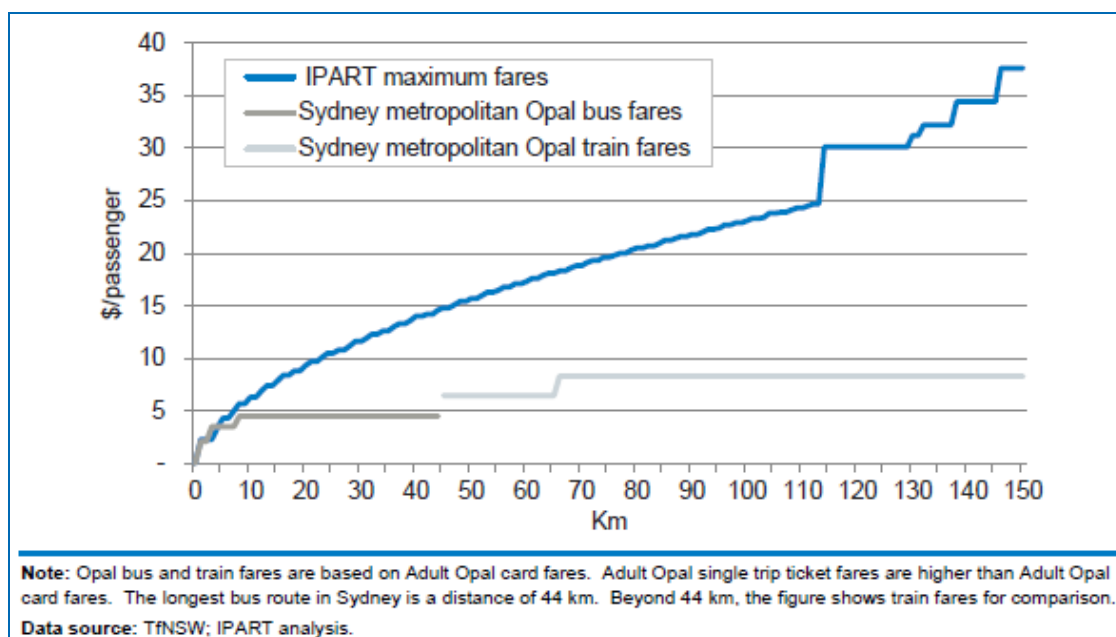


Figure 54: Maximum rural and regional bus fares vs Sydney metropolitan Opal fares (Source: IPART Issues Paper: Review of rural and regional bus fares from January 2018, released March 2017)

### 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.

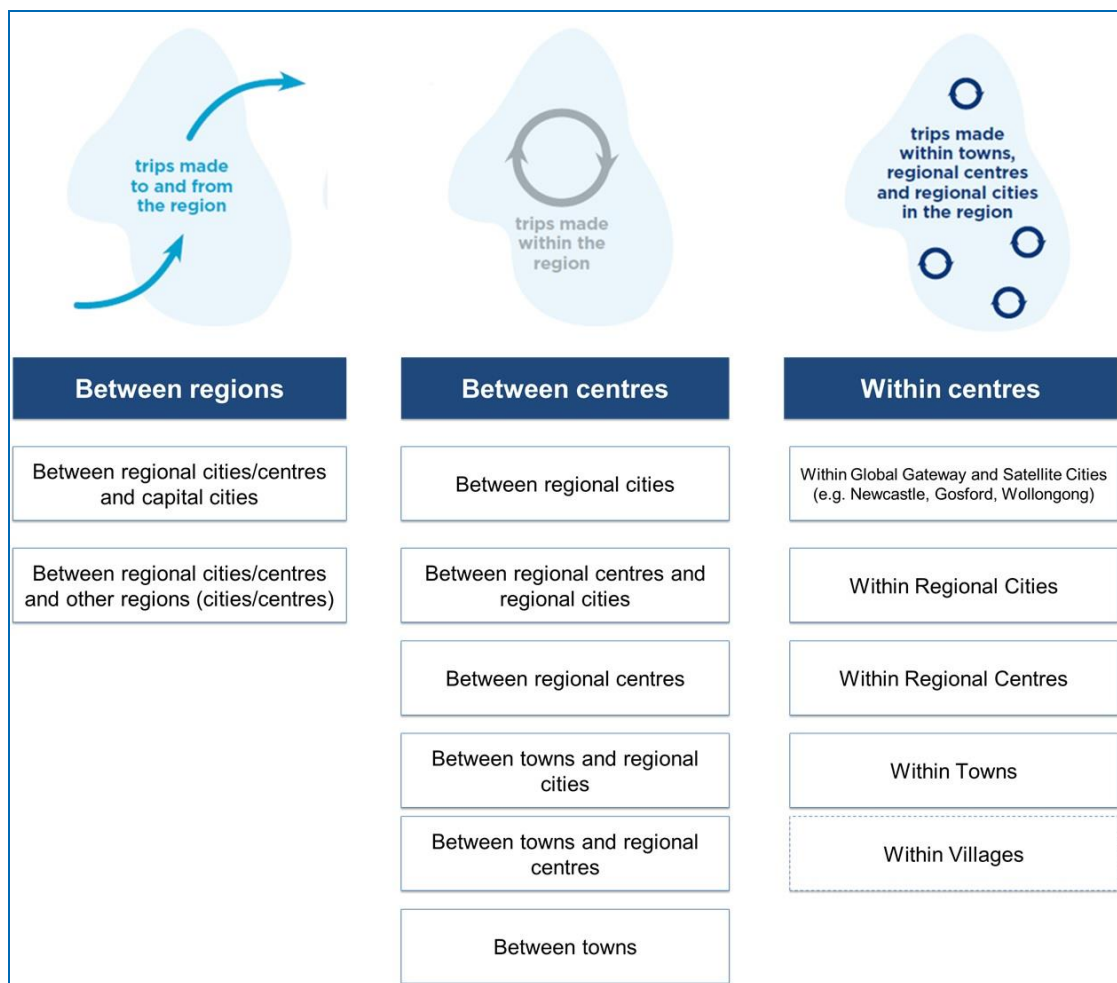


Figure 55: Types of journeys in Regional NSW

## 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.

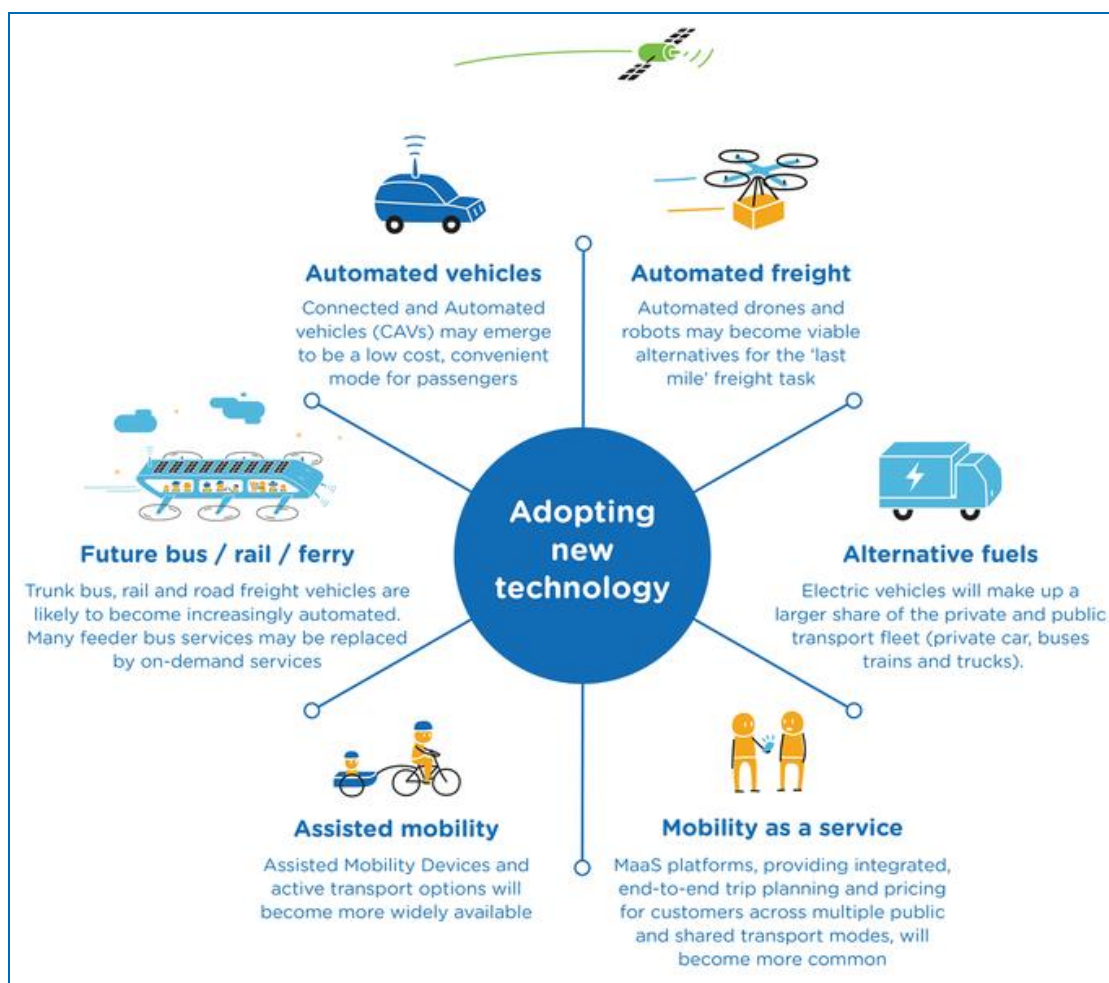


Figure 56: Technology and potential impact on the future of mobility

### 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.





## 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.

- 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

- 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><b>Indicators for Tier 1 services include:</b></p> <ul style="list-style-type: none"> <li>• Population greater than 30,000</li> <li>• A range of closely located facilities and services</li> <li>• Infrastructure to support integrated passenger transport operations.</li> </ul> | <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><b>Indicators for Tier 2 services include:</b></p> <ul style="list-style-type: none"> <li>• Populations 7,000 to 30,000</li> <li>• 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</li> <li>• Infrastructure to support integrated passenger transport operations.</li> </ul> | <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><b>Indicators for Tier 3 services include:</b></p> <ul style="list-style-type: none"> <li>• Town populations less than 7,000</li> <li>• Towns and villages remote from Tier 1 and Tier 2 services.</li> </ul> |
| <p><b>Tier 1 Services</b><br/>Air, Train, Bus, Ferry</p>  | <p><b>Tier 2 Services</b><br/>Train, Coach, Bus</p>  | <p><b>Tier 3 Services</b><br/>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.

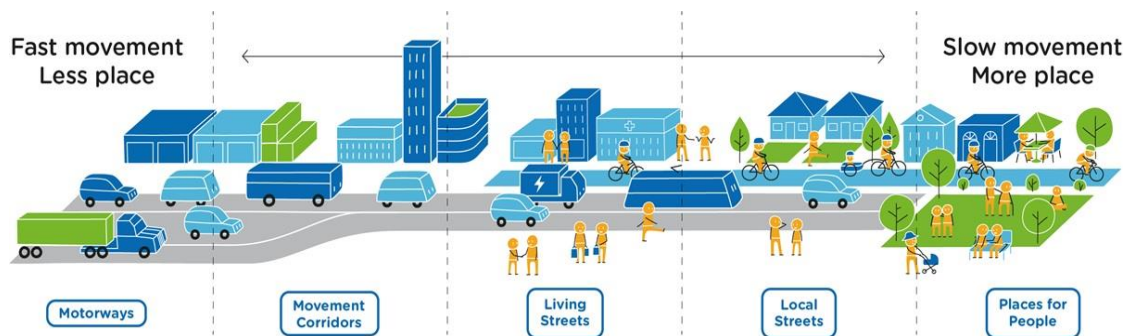


Figure 65: Movement and place framework to reflect surrounding land uses

## 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.

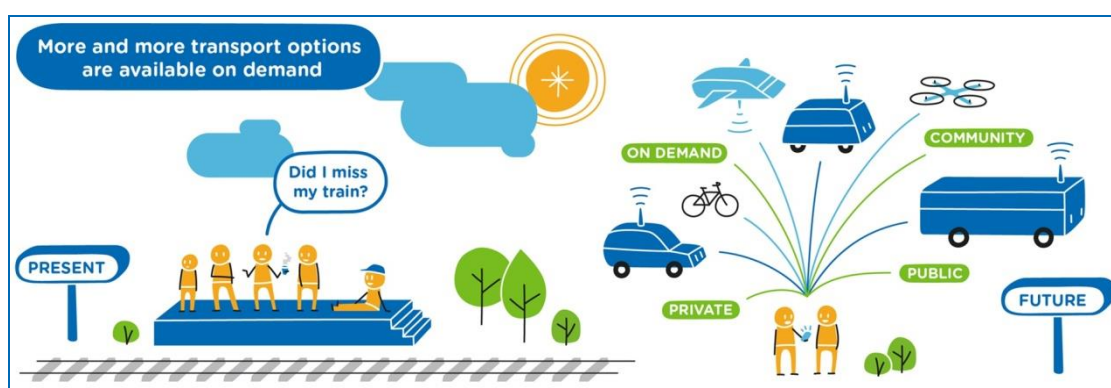


Figure 70: More demand responsive services expected in the future

## 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.

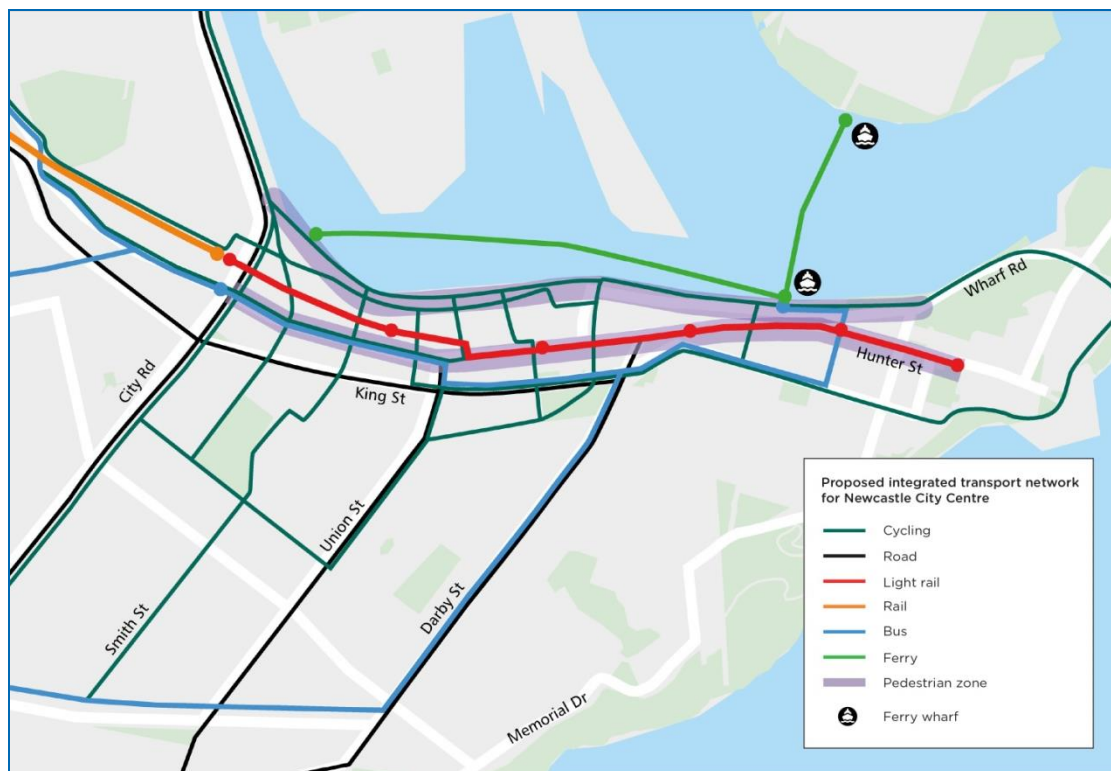


Figure 71: Proposed integrated transport network for Newcastle City Centre

### 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

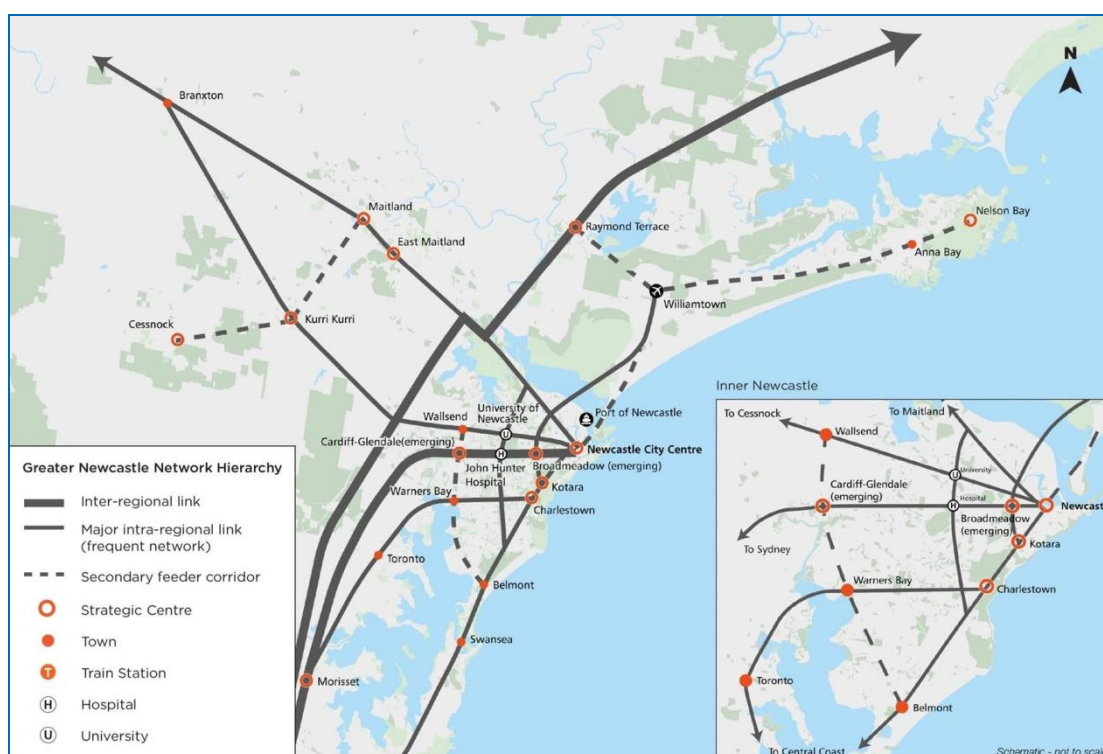


Figure 72: Greater Newcastle transport network hierarchy

## 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

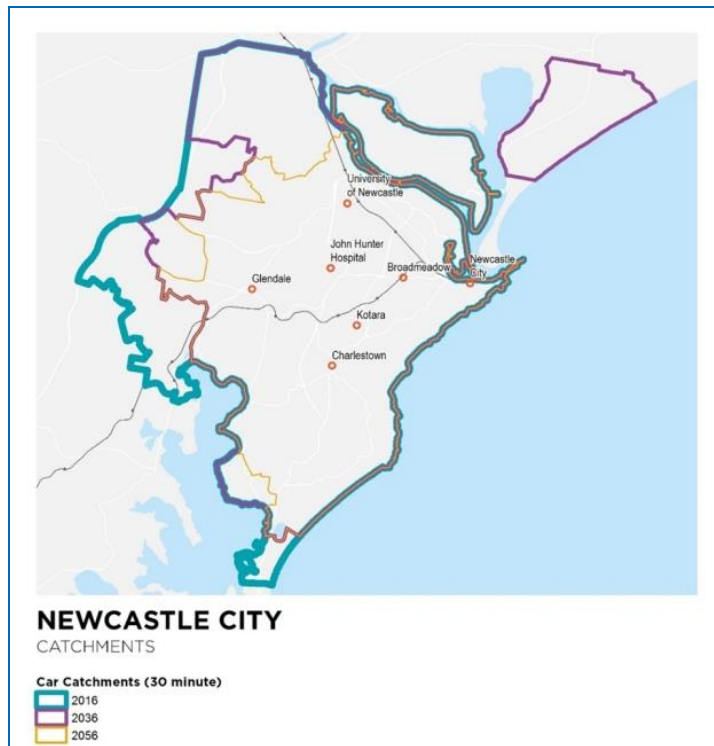


Figure 73: Newcastle City 30 minute car catchment over time

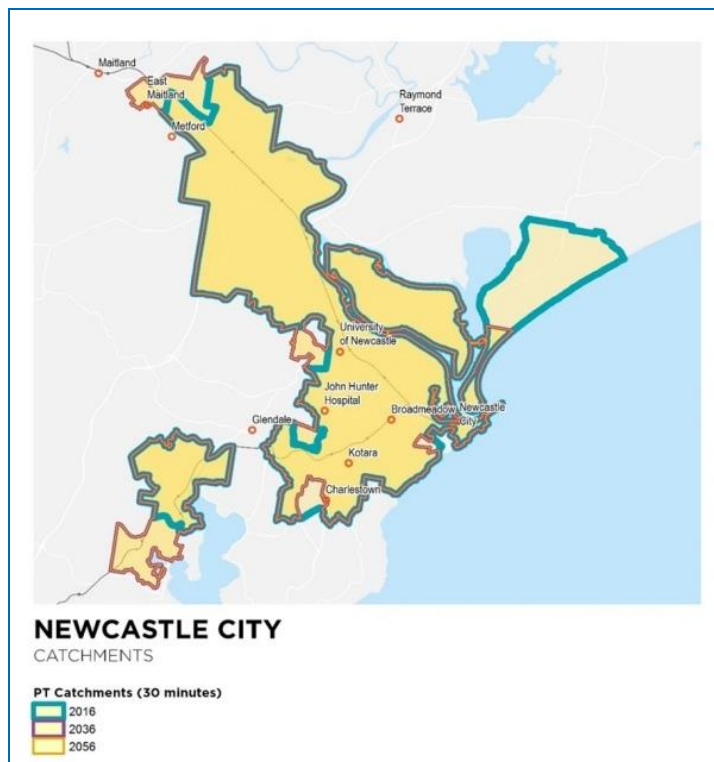


Figure 74: Newcastle City 30 minute public transport catchment over time



### **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).

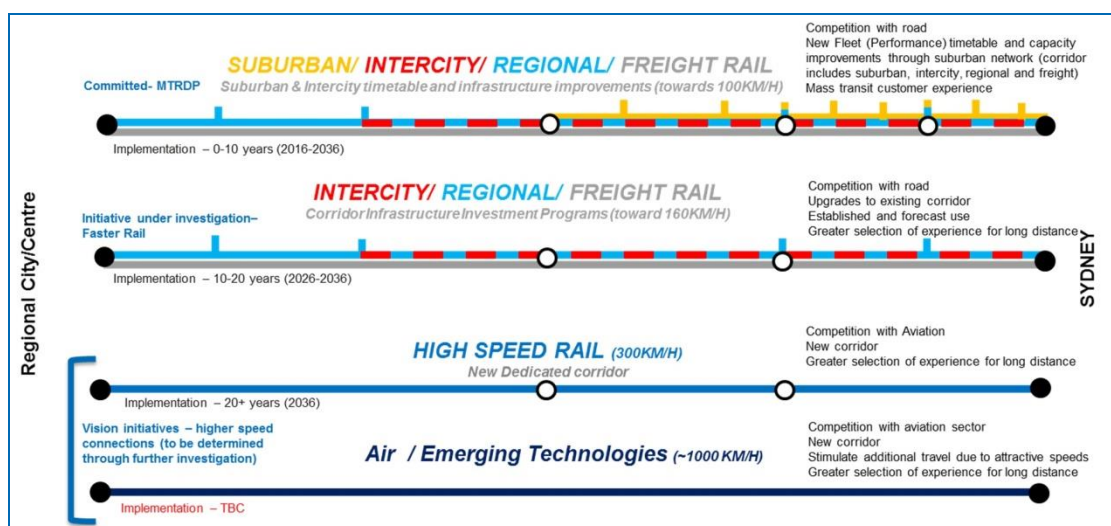


Figure 75: Options for connecting Global Gateway Cities to Sydney

## 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

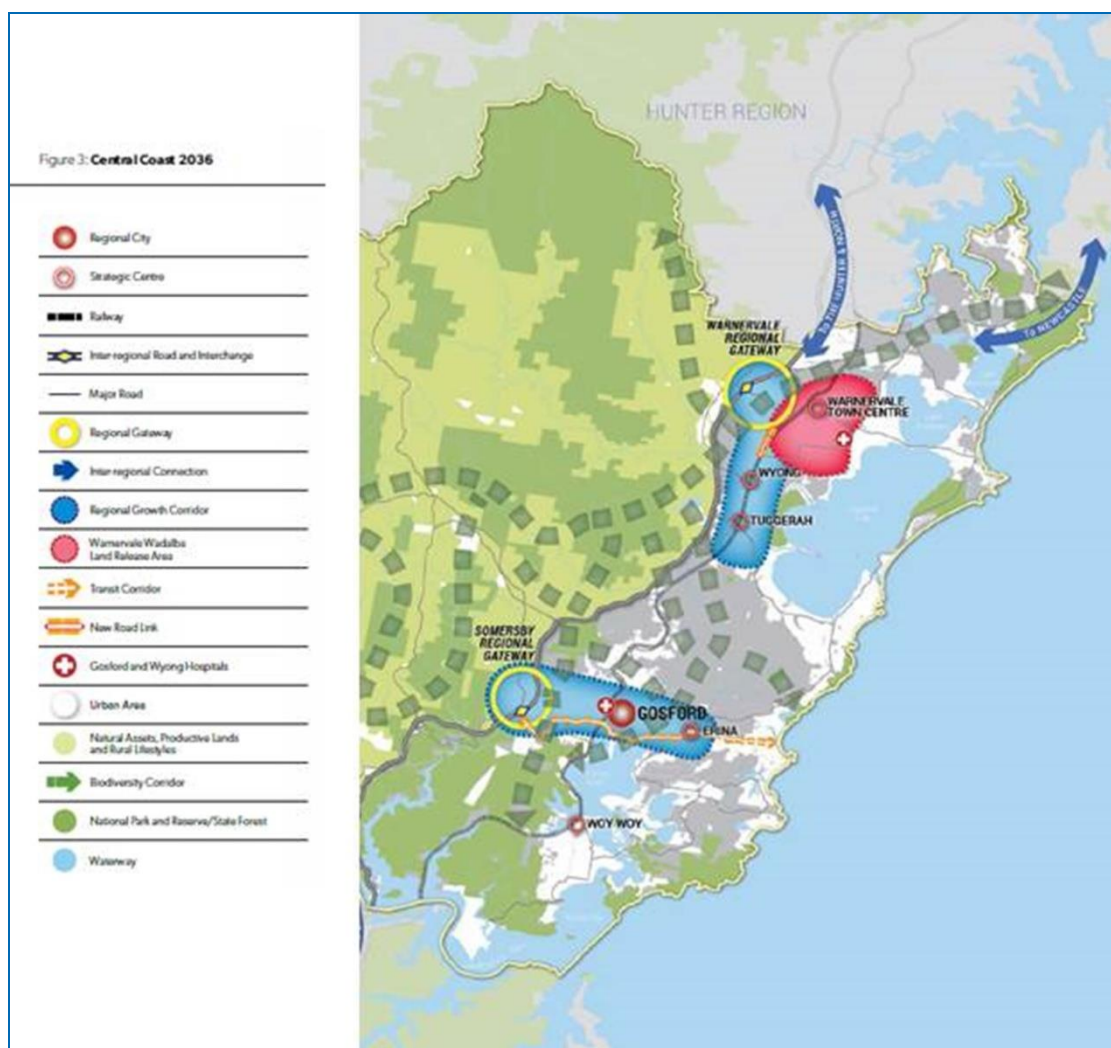


Figure 77: Central Coast land uses and transport connections (Source: Department of Planning and Environment Regional Plan)

### 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

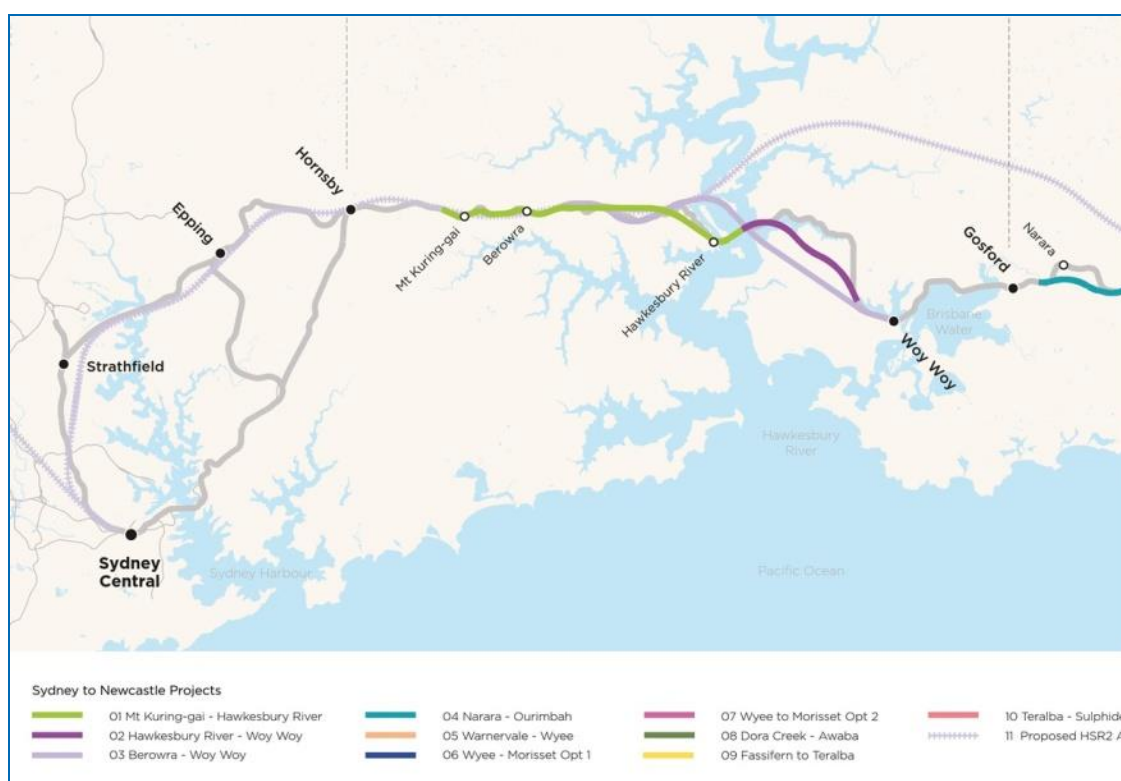


Figure 78: Faster rail to Central Coast and Newcastle



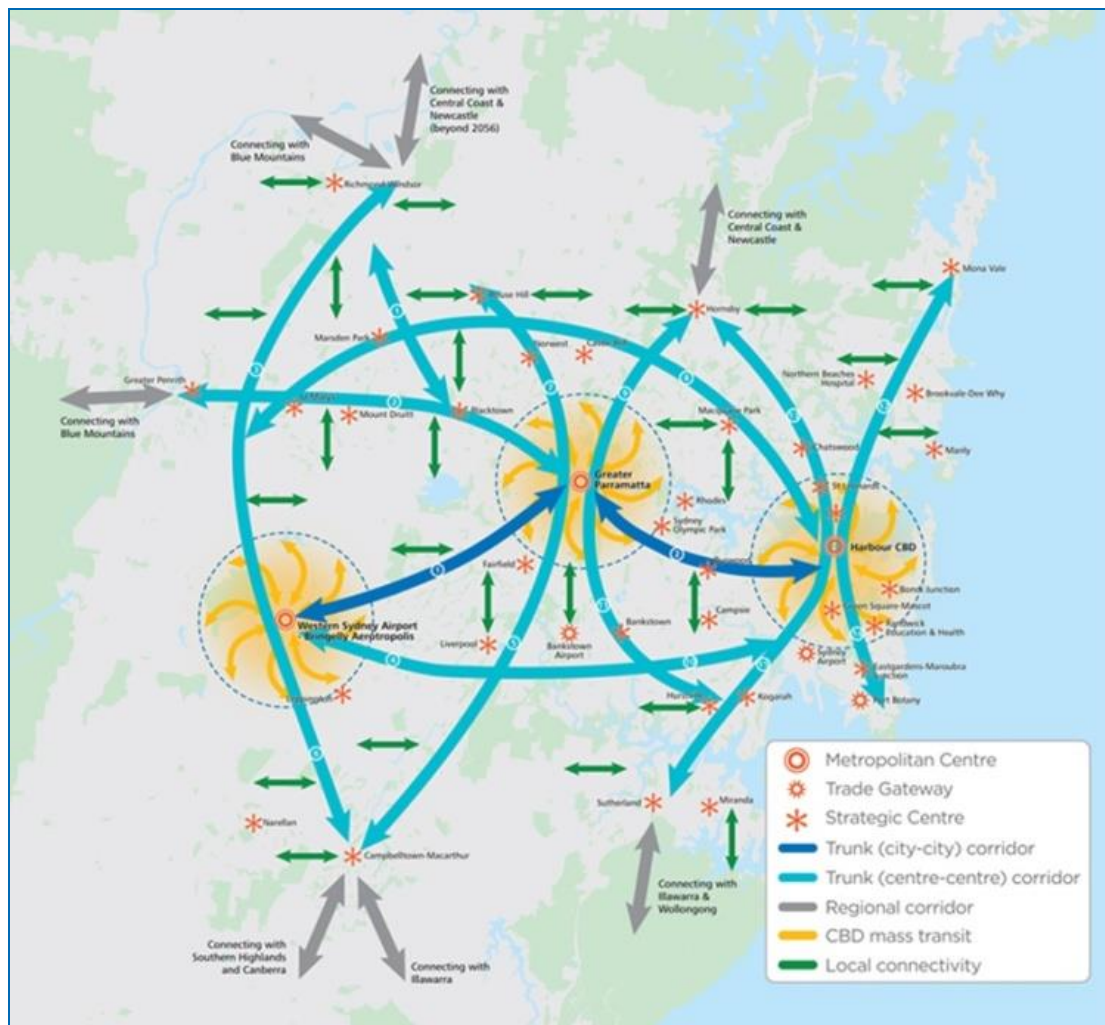


Figure 79: Greater Sydney strategic transport corridors

### 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.

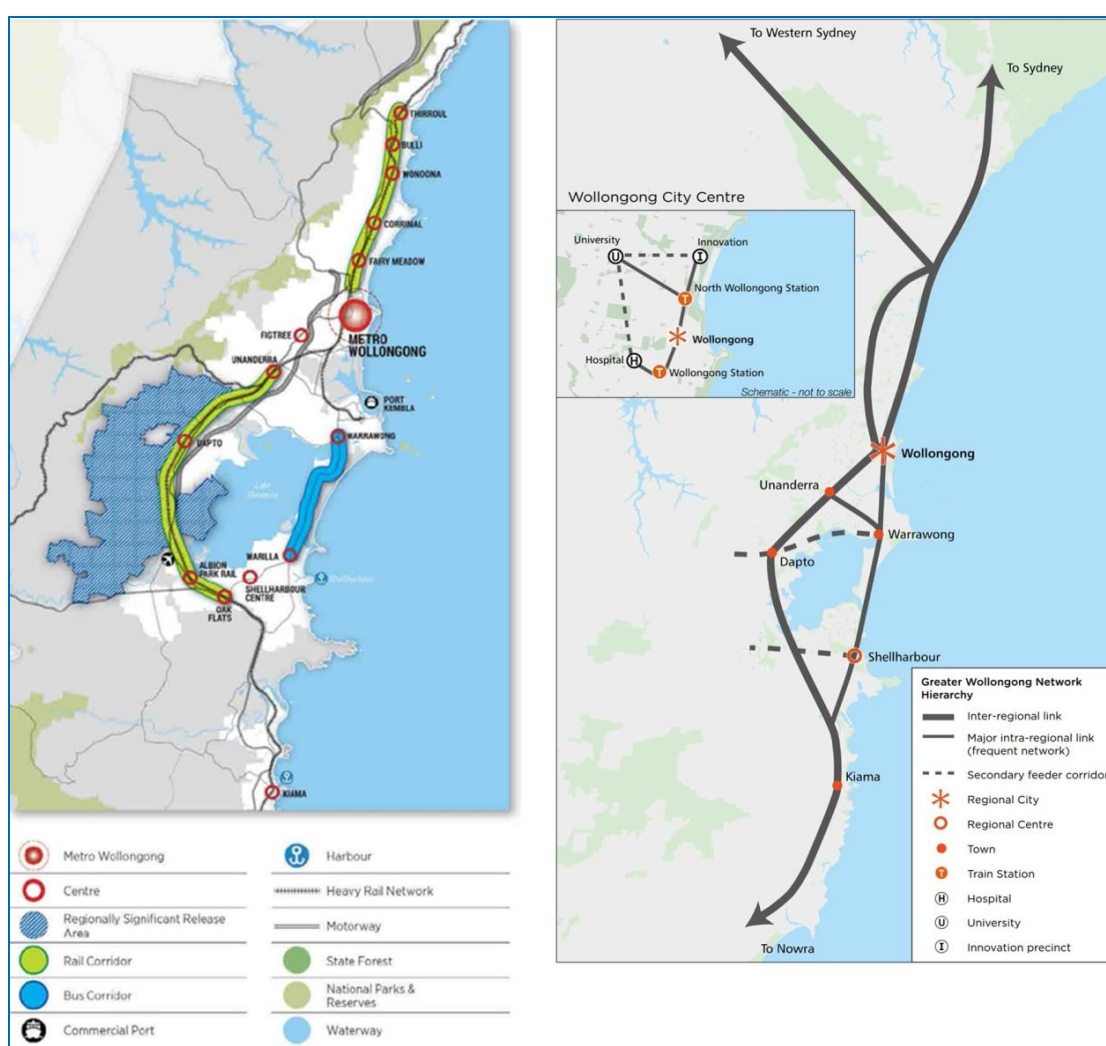


Figure 80: Greater Wollongong transport network hierarchy

## 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  |
|---|---|
| <b>30 Minute City</b>                                 | 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.   |
| <b>Accessibility</b>                                  | The ability for everyone, regardless of disability or special needs, to use and benefit from the transport system.  |
| <b>Active transport</b>                               | Transport that is human-powered, such as walking or cycling.  |
| <b>Active Transport (Walking and Cycling) Program</b> | Programs to improve walking and cycling connections within major centres and at public transport interchanges.  |
| <b>Aerotropolis</b>                                   | 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. |
| <b>Alternative fuels</b>                              | Fuels derived from sources other than petroleum. Examples include ethanol, electricity, biodiesel and natural gas.  |
| <b>Amenity</b>  | The extent to which a place, experience or service is pleasant, attractive or comfortable. Improved features, facilities or services may contribute to increased amenity.   |
| <b>Arterial roads</b>                                 | Main roads that carry high volumes and generally form the main freight routes.  |
| <b>Assisted Mobility Devices</b>                      | 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.                              |
| <b>Automation</b>                                     | 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.  |
| <b>Better Use</b>                                     | 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.  |
| <b>Bridges for the Bush Program</b>                   | 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   |
|---|--|
| <b>Bus Headstart</b>                            | New bus routes implemented in new growth areas.  |
| <b>Catchment</b>                                | The area from which a location or service attracts people.   |
| <b>Central River City</b>                       | One of the three cities of the Greater Sydney metropolis, anchored by Greater Parramatta in the Central City District.   |
| <b>Child Restrain Evaluation Program</b>        | Program to provide child restraint ratings to help inform parents about safety of child restraints prior to purchase.  |
| <b>Coastal geography</b>                        | The area broadly represented as between the Great Dividing Range and the NSW coastline. It excludes Greater Sydney and the Outer Metropolitan area.  |
| <b>Committed initiatives (0-10 years)</b>       | Initiatives funded for construction or contractually committed as part of key maintenance, renewal or safety programs. Some are subject to final business cases.   |
| <b>Commuter car parks (CCPs)</b>                | 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.   |
| <b>Congestion</b>                               | 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.  |
| <b>Connected and Autonomous Vehicles (CAVs)</b> | 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. |
| <b>Conurbation</b>                              | The merging of separate cities generally through population growth and physical expansion to form an extended urban area.  |
| <b>Corridor</b>                                 | A broad, linear geographic area between centres or trip generators.  |
| <b>Customer</b>                                 | 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.   |
| <b>Customer outcomes</b>                        | What customers can expect from the transport system.   |
| <b>Demand-responsive (or on-demand)</b>         | Transport services that are run based on the demands of individual customers, rather than a fixed timetable or route.  |
| <b>Disability Discrimination Act</b>            | A Commonwealth Act that makes it unlawful to discriminate against a person, in many areas of public life, including:   |

| Term                                   | Definition  |
|--|---|
| <b>(1992)</b>                          | employment, education, getting or using services, renting or buying a house or unit, and accessing public places, because of their disability.  |
| <b>Driver Licensing Access Program</b> | Program that helps remove the barriers that prevent disadvantaged Aboriginal people and other disadvantaged communities in NSW from entering the licensing system.  |
| <b>Drones</b>                          | An unmanned aerial vehicle (UAV) which may be remotely controlled or can fly autonomously.  |
| <b>Eastern Harbour City</b>            | One of the three cities of the Greater Sydney metropolis, spanning the North, Eastern City and South Districts, anchored by the Harbour CBD.  |
| <b>Enhanced Enforcement Program</b>    | Partnership with the NSW Police Force, including the expansion of Mobile Drug Testing.  |
| <b>First mile / last mile</b>          | 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.   |
| <b>Fixing Country Rail</b>             | NSW Government program that provides targeted funding for rail infrastructure enhancement projects that eliminate connectivity constraints on the NSW regional rail network.  |
| <b>Fixing Country Roads</b>            | NSW Government program that provides targeted funding to local councils to repair and upgrade Regional NSW roads.   |
| <b>Fleet</b>                           | The collective vehicles of a transport company or service.  |
| <b>Flexible transport</b>              | The same definition as demand-responsive transport.   |
| <b>Freight</b>                         | Goods or cargo transported by truck, rail, aircraft or ship.  |
| <b>Geographies</b>                     | 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. |
| <b>Global city</b>                     | Cities that service and support the complex and specialised economic activities of global markets.  |
| <b>Global gateway</b>                  | 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.  |
| <b>Greater Newcastle</b>               | The area encompassed by the five local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port   |



| Term   | Definition   |
|--|--|
|  | Stephens.  |
| <b>Greater Parramatta</b>                                      | The central business district of Parramatta includes Parramatta City, and the precincts of Westmead, Parramatta North, Rydalmere and Camellia.   |
| <b>GPOP</b>  | 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.  |
| <b>Greater Sydney</b>  | 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.  |
| <b>Greater Sydney Commission (GSC)</b>                         | An independent organisation funded by the NSW Government, responsible for coordinating and aligning the planning that will shape the future of Greater Sydney.   |
| <b>Greater Wollongong</b>                                      | The area encompassed by the two local government areas of Wollongong and Shellharbour.   |
| <b>‘Green On Green’ Pedestrian Protection Program</b>          | 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.   |
| <b>Hub and spoke</b>   | 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.   |
| <b>Infrastructure NSW (iNSW)</b>                               | An Independent statutory agency responsible for assisting the NSW Government with identifying and prioritising the delivery of critical public infrastructure for NSW.   |
| <b>Initiatives for investigation (0-10 years, 10-20 years)</b> | 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. |
| <b>Inland geography</b>  | The area broadly represented as between the Great Dividing Range and the Remote geography in NSW.  |
| <b>Inland rail</b>   | A proposed 1,700km freight rail link between Melbourne and Brisbane via regional Victoria, New South Wales and Queensland.   |

| Term  | Definition  |
|---|---|
| <b>Intelligent Transport System (ITS)</b>         | 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. |
| <b>Interchange</b>                                | 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.  |
| <b>Intermediate transit</b>                       | 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.                    |
| <b>Intermodal terminal</b>                        | 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.  |
| <b>Intersection Safety Infrastructure Program</b> | Investment to accelerate treatment of high risk intersections.  |
| <b>Journey</b>                                    | 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.  |
| <b>Land use planning</b>                          | 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.  |
| <b>Landside access</b>                            | Ability for people to travel to and from airport infrastructure.  |
| <b>Last Mile Productivity Program</b>             | Package of works that will focus on improving first and last mile connectivity and efficiency for the freight network.  |
| <b>Level Crossing Improvement Program</b>         | Funding for level crossing upgrades and initiatives to support safety awareness and police enforcement campaigns.   |
| <b>Light rail</b>                                 | 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.                        |
| <b>Liveability</b>                                | 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.   |
| <b>Local Government Road Safety Program</b>       | 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   |
|--|--|
| <b>Mandatory Alcohol Interlock Program</b> | 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.   |
| <b>Maritime Safety Program</b>             | Delivery of the NSW Regional Boating Plans.  |
| <b>Mass transit</b>                        | The transportation of large numbers of people by means of high capacity vehicles, especially within urban areas.   |
| <b>Metro</b>                               | An urban railway transportation that is associated with high capacity, high frequencies (typically turn-up-and-go, rather than timetabled) and greater automation.   |
| <b>Metropolitan Centre</b>                 | 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.   |
| <b>Mobility</b>                            | The ability to move or be moved easily and without constraint.   |
| <b>Mobility as a Service (MaaS)</b>        | 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.   |
| <b>Mode</b>                                | The type of vehicle or method used for a trip. For example, train, bus, light rail, car, motorbike, bicycle, ferry or walking.   |
| <b>Mode Share</b>                          | The proportion of overall trips that are taken on a particular mode.   |
| <b>Movement</b>                            | The movement of people and goods on the transport network.   |
| <b>Movement and Place Framework</b>        | 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"> <li>• movement needs of all our customers and the modes they use to travel</li> <li>• places where our customers are starting and finishing their journeys.</li> </ul> |
| <b>Net zero</b>                            | 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.  |
| <b>New Intercity Fleet</b>                 | A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast.  |
| <b>NSW Long Term Transport Master</b>      | NSW's first integrated transport plan, which brought together planning for freight and passenger movements across all modes  |

| Term  | Definition  |
|---|---|
| <b>Plan</b>   | of transport. Future Transport builds upon the 2012 Long Term Transport Master Plan and the commitments it has delivered.   |
| <b>NSW Transport Cluster</b>                                      | 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.  |
| <b>Our Sydney 2056: Greater Sydney Commission's Regional Plan</b> | Greater Sydney Commission's long-term land use plan for Greater Sydney to sustain and enhance the city's productivity, liveability and sustainability.  |
| <b>Outer Metropolitan Area / geography</b>                        | An area encompassing the local government areas of Shellharbour, Wollongong, Central Coast, Lake Macquarie, Cessnock, Maitland, Newcastle and Port Stephens.  |
| <b>Outer Metro Roads Program</b>                                  | Program to identify improvements needed for the road networks within the Outer Metropolitan Area.   |
| <b>Patronage</b>  | Number of customers using a transport service during a particular period.   |
| <b>Peak travel</b>  | Refers to travel taken during the periods of 6am-9am or 3pm-6pm on weekdays, excluding public holidays.   |
| <b>Pedestrian Safe Sydney Program</b>                             | Package of road safety infrastructure measures to improve safety at key high risk pedestrian hot spots.   |
| <b>Personalised transport</b>                                     | 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. |
| <b>Place</b>  | 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.   |
| <b>Place-based</b>  | Thinking and decisions that respond and consider the different characteristics of places.   |
| <b>Place-making</b>   | Successful placemaking either preserves or enhances the character of our public spaces, making them more accessible, attractive, comfortable and safe.  |
| <b>Point-to-point</b>   | 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.   |
| <b>Port Efficiency, Access and Integration Package</b>    | Road and rail projects to improve port access, efficiency and integration.   |
| <b>Precinct</b>   | 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.   |
| <b>Precinct Plan</b>                                      | Plan to deliver improved access to/from/within key precincts by all modes.   |
| <b>Private Vehicles</b>                                   | Passenger vehicles, motorcycles and trucks, owned and operated by those with a driving license and appropriate registration.   |
| <b>Rail Network Optimisation Program</b>                  | Program that aims to improve efficiency in rail services.  |
| <b>Rapid bus package</b>                                  | Implementation of programs to prioritise access for buses over private vehicles.   |
| <b>Real-time information</b>                              | 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. |
| <b>Regional Airports Program</b>                          | Landslide access improvements to increase the efficiency, accessibility, competition, commercial viability and sustainability of regional aviation in NSW.   |
| <b>Regional Centre In Town Access Improvement Program</b> | Program to improve in town access and amenity in regional cities and centres.  |
| <b>Regional Interchange Program</b>                       | Upgrades of major interchanges to encourage public transport use by providing accessible, easy to use, safe and secure interchanges between modes.   |
| <b>Regional NSW</b>                                       | 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.   |
| <b>Regional Parking Guidelines</b>                        | Development of a strategy for the delivery of parking in Regional NSW.   |
| <b>Regional Rail Fleet Program</b>                        | Program to deliver a new regional rail fleet, including the replacement of the XPT, XPLOER and Endeavour trains.   |



| Term   | Definition   |
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| <b>Regional Transport Hubs</b>                           | Regional cities that will perform a hub focus for transport into the future.   |
| <b>Remote geography</b>                                  | The area broadly represented as west of Dubbo and Griffith in NSW.   |
| <b>Resilience</b>  | The ability of infrastructure systems and services to withstand unexpected climate, weather and catastrophic events.   |
| <b>Resilience Package</b>                                | Program to support immunity for flood prone regional roads.  |
| <b>Ridesharing</b>                                       | Business models similar to Uber and Lyft within which private citizens provide point-to-point transport services to other citizens.  |
| <b>Road hierarchy</b>                                    | 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. |
| <b>Road Safety Communication Campaign Annual Program</b> | 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.   |
| <b>Road Safety School Education Program</b>              | Program to deliver mandatory road safety education in schools across NSW.  |
| <b>Roads and Maritime Services (RMS)</b>                 | 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.   |
| <b>Rolling Stock</b>                                     | Refers to all vehicles that move on rail, including passenger carriages, powered (locomotives) and unpowered (wagons) rail vehicles.   |
| <b>Safer Drivers Course</b>                              | 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.   |
| <b>Safer Roads Infrastructure Program</b>                | Program of road safety infrastructure projects to address key crash types across NSW.  |
| <b>Safe System Guidelines Framework</b>                  | Development and implementation of a framework to identify safety measures known to reduce road trauma and based on Safe System design principles.  |
| <b>Satellite city</b>                                    | The cities that will form part of the conurbation of Greater Sydney.   |
| <b>Sealing Country Roads Program</b>                     | Program of works to progressively seal unsealed roads in Regional NSW.   |
| <b>Self-Drive Car Share Accessibility Package</b>        | Provide support for development of car share across Regional NSW.  |

| Term   | Definition  |
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| <b>Service (or transport service)</b>        | 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.  |
| <b>Slopes and Culverts Condition Program</b> | Program of works to progressively improve the conditions of slopes and culverts in the transport network.   |
| <b>Slots</b>                                 | The right granted by an airport that allows an aircraft to land or depart during a specific time period.  |
| <b>Smart Motorway</b>                        | Motorways that use embedded sensors, analytics and customer feedback tools to actively manage congestion and safety and respond to traffic incidents.   |
| <b>State Infrastructure Strategy</b>         | 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.  |
| <b>Sydney City</b>                           | 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.  |
| <b>Three cities</b>                          | 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. |
| <b>Trade Gateway</b>                         | 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.       |
| <b>Train</b>                                 | A mode of transport that carries people or goods on dedicated rail corridors. It may refer to suburban trains or metro-style trains.  |
| <b>Transport disadvantage</b>                | 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.   |
| <b>Transport for NSW (TfNSW)</b>             | The statutory authority of the New South Wales Government, responsible for managing transport services in New South Wales.  |
| <b>Transport hub</b>                         | 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.   |
| <b>Transport Taxi Subsidy Scheme (TTSS)</b>  | Support for NSW residents who are unable to use public transport because of a disability.   |

| Term                                     | Definition  |
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| <b>Trauma</b>                            | Physical or mental injuries which require medical attention.  |
| <b>Travel Choices</b>                    | 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.   |
| <b>Turn-up-and-go</b>                    | Services with frequency equal to or under 5 minutes, requiring little to no travel planning.  |
| <b>Urban Renewal</b>                     | 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.   |
| <b>Visionary initiatives (20+ years)</b> | 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. |
| <b>Western Parkland City</b>             | 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).  |
| <b>Western Sydney Airport (WSA)</b>      | The designated name for the second Sydney airport, located within the suburb of Badgerys Creek.   |
| <b>Whole-of-government</b>               | Working in partnership with all government stakeholders including the different state government agencies and local government councils.  |