NSW Common Planning Assumptions

Common Planning Assumptions are used across agencies to ensure alignment and understanding of the relevant data, policies and assumptions to underpin planning decisions and policy analysis for government strategies and investment decisions. This supports consistency in the advice provided to Government and the community.

The Common Planning Assumptions represent a consistent baseline or a starting point, and are developed based on current and past trends and agreed policies and plans. They are not targets or scenarios.

This strategy and supporting analysis are based on the agreed Common Planning Assumptions as at March 2018.

Details of the Common Planning Assumptions used are set out in the Common Planning Assumptions Book version 3.1

Cover photo courtesy of Maitland City Council
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>02</td>
</tr>
<tr>
<td>Introduction</td>
<td>08</td>
</tr>
<tr>
<td>Our Vision for 2056</td>
<td>53</td>
</tr>
<tr>
<td>Customer outcomes for Greater Newcastle</td>
<td>75</td>
</tr>
<tr>
<td>Service and infrastructure initiatives for Greater Newcastle</td>
<td>124</td>
</tr>
<tr>
<td>Next steps</td>
<td>138</td>
</tr>
<tr>
<td>Glossary</td>
<td>142</td>
</tr>
</tbody>
</table>
Executive Summary

The Greater Newcastle Future Transport Plan is an evidence based plan that has identified key transport policy, service and infrastructure initiatives for investigation within the Global Gateway City of Greater Newcastle, comprising the five local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens.

The Greater Newcastle Future Transport Plan provides the overarching strategic transport network and vision that will guide future transport planning for the Greater Newcastle area.

The Plan builds on the platform being established to increase liveability in Greater Newcastle through more sustainable travel behaviour.

Newcastle Light Rail has been a transformative infrastructure project, triggering increased investment and urban renewal of the city centre. This has seen the development of University of Newcastle NeW Space, a landmark education precinct, Newcastle Interchange, Newcastle Courthouse upgrades as well as new businesses entering the city centre, supporting jobs in the region.

These city centre investments have flow on benefits across Greater Newcastle and the broader Global Gateway City catchment. The coming years will see investment in the New Cruise Terminal, the Hunter Sports and Entertainment Precinct and new road projects, such as, the completion of the Inner City Bypass between Rankin Park and Jesmond which will support better access across Greater Newcastle and to the John Hunter Hospital Health Precinct. Newcastle Airport is expecting strong passenger growth, attracting increased business travellers, visitors and tourists to the region.

In addition to Light Rail, other improvements to public transport will support these changes with planning underway for the New Intercity and Regional Rail Fleets. The recent introduction of Newcastle Transport has led to more frequent bus and ferry services as well as trials of on demand buses within the metro heart and metro core. This new servicing model could be expanded across the rest of Greater Newcastle and beyond.
With reference to these investments, as well as population, employment, and other key drivers of demand and travel behaviour, key initiatives explored in this Plan include:

- Development of an integrated public transport network hierarchy, including:
  - Further development of improved bus services to support current and forecast customer demand for travel across Greater Newcastle, building on the recent changes made by Newcastle Transport
  - Improved integration and interchange between modes/services to enable seamless customer experiences
  - Expansion of 30 minute catchments for public transport
  - Improved time of day coverage and service frequency, reduced journey times and the deployment of on demand, flexible services
  - Investment in rail corridor infrastructure programs to optimise the operation of the New Intercity Fleet, resulting in faster journeys for customers
  - Station upgrades and integration between the stations and surrounding land uses to support increased public transport use, with opportunities for park and ride to reduce private vehicle travel for long distances

- Facilitating car sharing services that are integrated with public transport

- Further development of active transport networks

- Opportunities to extend the light rail in Newcastle to facilitate urban development in the metro core

- Addressing pinch points in the road network and informing the program of road network optimisation improvements

- Undertaking a car parking review to evaluate and prioritise car parking availability and use, including consideration of park and ride and car pooling

- Introducing travel demand management policies and transport optimisation programs to rebalance demand against service and infrastructure provision

- Protecting freight movements and reinforcing key links to the port and airport

- Separating passenger and freight rail services through the Lower Hunter Freight Corridor
The Draft Greater Newcastle Future Transport Plan was released in November 2017 jointly with the Department of Planning and Environment’s Draft Greater Newcastle Metropolitan Plan 2036. The two plans were developed concurrently to ensure land use and transport outcomes for Greater Newcastle are truly integrated.

Engagement sessions were held with local councils, industry and the community. In total over 20 long-form submissions and more than 200 online comments were received on the Draft Greater Newcastle Future Transport Plan.
Executive Summary

Figure 2: Existing transport networks
Future Transport networks

Key
- Main roads
- New or upgraded road
- New or upgraded rail
- Higher speed connections
- Existing regional cycleways
- Proposed regional cycleways
- Light Rail
- Ferry
- Priority public transport corridors
- Greater Newcastle
- Waterways
- Strategic Centre
- Port
- Airport

Figure 3: Future transport networks
Greater Newcastle Metropolitan Plan 2036

The Greater Newcastle Future Transport Plan was developed in close consultation with the Department of Planning and Environment (DPE) as they created their first-ever Greater Newcastle Metropolitan Plan 2036.

The Greater Newcastle Metropolitan Plan 2036’s vision recognises the area as:

“Australia’s newest and emerging economic and lifestyle city, connected with northern NSW and acknowledged globally as:

› dynamic and entrepreneurial, with a globally competitive economy and the excitement of the inner city and green, suburban communities
› offering great lifestyles minutes from beaches or bushland, the airport or universities, and from the port to the lake
› a national leader in the new economy, with smarter cities and carbon neutral initiatives, and with collaborative governance that makes it a model to others in creating and adapting to change”

The outcomes that underpin the vision for Greater Newcastle are:

› Outcome 1 – Create a workforce skilled and ready for the new economy
› Outcome 2 – Enhance environment, amenity and resilience for quality of life
› Outcome 3 – Deliver housing close to jobs and services
› Outcome 4 – Improve connections to jobs, services and recreation

Included in the plan are strategies and actions to deliver on the vision and outcomes to drive sustainable growth across Cessnock City, Lake Macquarie City, Maitland City, Newcastle City and Port Stephens communities. A focus is on aligning infrastructure and services in catalyst areas, these are defined as places of metropolitan significance that need a collaborative approach to the delivery of new jobs and homes.
CHAPTER 1

Introduction
Future Transport 2056 comprises an overarching strategy and a suite of supporting plans. It is an update of NSW’s *Long Term Transport Master Plan* released in 2012. It has been developed in concert with the Greater Sydney Commission’s *A Metropolis of Three Cities*, Infrastructure NSW’s *State Infrastructure Strategy*, and the DPE’s *Regional Plans*, to provide an integrated vision for the state.

The Greater Newcastle Future Transport Plan is a key Supporting Plan in the Future Transport 2056 suite, and is aligned with the *Regional NSW Services and Infrastructure Plan* and the *NSW Freight and Ports Plan* due to be released in 2018. In addition, it was developed in collaboration with the Department of Planning and Environment’s *Greater Newcastle Metropolitan Plan 2036* and has been informed by the Department of Premier and Cabinet’s *A 20-Year Economic Vision for Regional NSW*.

![Figure 4: Overview of Future Transport 2056](Image)
Future Transport Strategy

The Future Transport Strategy is a vision for how transport can support growth and the economy of New South Wales (NSW) over the next 40 years. It has six outcomes to guide investment, policy and reform and service provision. These outcomes provide a framework for network planning and investment aimed at harnessing rapid change and innovation to support a modern, innovative transport system that serves the community and economy well into the 21st century.

Figure 5: Future Transport Strategy customer and network outcomes
The Regional NSW Services and Infrastructure Plan

The Regional NSW Services and Infrastructure Plan is the NSW Government’s blueprint for transport in regional NSW until 2056. It sets out the Government’s thinking on the big trends, issues, services and infrastructure needs which shape transport in regional NSW. The plan covers all regions in NSW outside Greater Sydney.

The Regional NSW Services and Infrastructure Plan is underpinned by ten outcomes customers can expect. These 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. Chapter 3 of this document outlines what these outcomes will mean for the people, visitors and businesses of Greater Newcastle and how transport supports the emergence of the city as a Global Gateway.

Future Transport Supporting Plans

Supporting Plans are more detailed issues or place based planning documents that will support the implementation of Future Transport 2056. The Greater Newcastle Future Transport Plan is a supporting plan that considers the Greater Newcastle area. It provides the overarching strategic transport vision and network that will guide future transport planning for the Greater Newcastle area, underpinned by the ten customer outcomes from the Regional NSW Services and Infrastructure Plan.

Other supporting plans underway include the NSW Freight and Ports Plan and Future Transport Tourism and Transport Plan. These plans are due to be finalised in 2018. The Greater Newcastle Future Transport Plan is aligned to these plans and the final versions of each will reflect the feedback received from stakeholders in Greater Newcastle.
Defining Greater Newcastle and its future

Greater Newcastle is one of NSW’s key Global Gateway Cities. Understanding current and future population, employment and other key drivers of travel demand allow us to plan effectively for its future and meet changing needs.

Global Gateway City

Greater Newcastle has a catchment of over 1 million people. It has strong connections within NSW to Sydney, Central Coast, North Coast, New England North West and Central West and Orana regions. Greater Newcastle has growing national and international connections through its airport and port.

Global gateway city areas of influence

Areas in NSW linked to cities in other states

The population of NSW has close connections with a number of global gateway cities within NSW as well as cities outside the state such as Brisbane, Gold Coast, Canberra, Melbourne and Adelaide. These cities provide services and facilities to support regional NSW’s population and industry.

Figure 6: Global Gateway Cities in NSW and their areas of influence
Greater Newcastle is transitioning from its heavy industrial past to an urbanised, service, creative and knowledge based city. It benefits from its access to international markets via the port and airport, strong health and education precincts and economic development opportunities through tourism, growth of specialised manufacturing and small-medium enterprises, defence facilities and a growing knowledge industry base.

There are further urban renewal opportunities to be realised. Transformative infrastructure projects including light rail and the introduction of frequent bus and ferry connections as well as opportunities to support and increase liveability through more sustainable travel behaviour will ensure its success into the future.

**Five local government areas**

The Greater Newcastle Future Transport Plan and Greater Newcastle Metropolitan Plan 2036 have been prepared for the five local government areas (LGAs) of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens.

The Greater Newcastle Metropolitan Plan 2036 provides targeted strategies and actions for areas within the metro frame and metro core only. The metro frame is an arc of cities and towns from southern Lake Macquarie to Cessnock, Branxton, Maitland and Raymond Terrace. The metro core is the area east of the Pacific Motorway and bounded by the harbour, Pacific Ocean and the northern shores of Lake Macquarie. These areas are shown in Figure 7.

![Figure 7: Greater Newcastle area](Source: Department of Planning and Environment)
Population growth and change

Home to the Awabakal, Worimi, Wonnarua, Biripi and Geawegal peoples, the Hunter region, including Greater Newcastle, is the most populous in regional NSW. By 2056 it is projected to have almost twice the population of the next largest regions of Illawarra-Shoalhaven and the Central Coast.

Most of the Hunter region’s current population is concentrated in Greater Newcastle. Greater Newcastle is growing rapidly and is projected to grow from around 575,000 people to around 760,000 by 2056, making it home to more people than the state of Tasmania or the Australian Capital Territory. Within Greater Newcastle, most people live within the Lake Macquarie (35%) and Newcastle (29%) LGAs.

As a Global Gateway City, Greater Newcastle serves a much wider catchment area that includes over one million people and has strong connections to Sydney, Central Coast, North Coast, New England North West and Central West and Orana. The future transport system for Greater Newcastle will need to support both its growing and changing population as well as its expanding regional influence.

New growth areas

The distribution of residential population growth across Greater Newcastle has a considerable impact on travel patterns and demand. The Greater Newcastle Metropolitan Plan 2036 identifies a goal of delivering 40% greenfield and 60% infill housing across Greater Newcastle by 2036. Infill housing development typically increases demand on existing services, whereas greenfield development requires planning for delivery of new services and infrastructure.

Population within the metro heart and surrounding metro core is expected to increase over the next forty years. However, there are strong short term growth forecasts for population in greenfield development sites in the metro frame and infill throughout the metro area. Focussing on urban renewal and managing greenfield development will mean transport service planning can be better aligned to respond to population change. DPE will continue to monitor housing and provide up to date forecasts regularly through the Urban Development Program.
As NSW continues to grow, our regional cities will play a larger role in providing services and developing greater connections to other states and Asia Pacific countries.

Population density

The highest population density in Greater Newcastle is within 5-10km of Newcastle city centre, the metro core, at around 19 people per hectare. This area is expected to continue to grow and densify into the future.
Figure 9: Population density in 2016 and 2056
(Source: Department of Planning and Environment LU16 projections, extrapolated to 2056)
Age distribution

The population of NSW is ageing as a greater proportion of the population move into older age groups (65 years and over) and older people are living longer. The population of Greater Newcastle is no exception. Furthermore, the trend is exacerbated by older people moving into the region from other areas, attracted to the coastal and regional lifestyle in retirement. Port Stephens and Lake Macquarie together have some of the highest number of residents aged 70 years and over in regional NSW.

The distribution of the population by age is important for planning the types of services needed within an area, including transport.

Figure 10 shows the current age distribution across Greater Newcastle, highlighting the age group with the highest number of people in each area. Greater Newcastle has higher proportions of people aged 60 years and over located in the coastal areas around Nelson Bay, Stockton and southern Lake Macquarie.

Higher proportions of working aged people (aged 30-59 years) are located around the metro core, concentrated north of Lake Macquarie, and in the areas north and south of Maitland.

The youngest populations are located further west around Cessnock and north to Raymond Terrace. Greater Newcastle’s metro core has a notably higher proportion of people aged between 20-29 years, reflecting the presence of the University of Newcastle.
Changing age distribution in Greater Newcastle

2016

2056

Key

<table>
<thead>
<tr>
<th>Main Roads</th>
<th>Rail Line</th>
<th>Airport</th>
<th>Strategic Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>10-19</td>
<td>20-29</td>
<td>30-39</td>
</tr>
</tbody>
</table>

Source: Department of Planning and Environment LU16 projections, extrapolated by TfNSW to 2056

Figure 10: Existing and projected age distribution across Greater Newcastle: age group with highest number of people in each SA2, 2016 and 2056
(Source: Department of Planning and Environment LU16 projections extrapolated to 2056)
Between 2016-2056 the older population is expected to increase in areas towards Nelson Bay and west of Lake Macquarie (Figure 10), along with the area between Newcastle airport and Nelson Bay and west of Lake Macquarie. The number of younger people is projected to increase most in the western area of Greater Newcastle as families move into the new growth areas as they are released.

**Older people’s access to services**

An ageing population holds specific challenges for the provision of transport services and infrastructure. The provision of transport services and infrastructure can impact on how easily older people can get around their local communities, undertake regular physical activity, stay connected to friends and family and get involved in community, civic and cultural recreational activities. This helps older people maintain their health and quality of life as maintaining good physical and mental health in later life supports independence and wellbeing.

With older age comes the increased likelihood of needing access to health services and assistance with day to day tasks, including mobility. Access to health care often requires travel beyond local areas for specialist services or hospital-based care. Driving and using public transport can become more difficult for people beyond the age of 75. Personalised, assisted transport services, such as Community Transport, allow older people to maintain their independence while accessing the services they need. As the number of people in these older age groups is projected to rise across Greater Newcastle over the next two decades, there will be an increased demand for assisted transport service options across the region.

**Access to jobs**

The residential location of people of working age, between 30 and 59 years, is influenced by the availability and cost of housing and distance to employment. Changes in preferences for housing and household composition also play a part in where people live. In Greater Newcastle people of working age are more highly concentrated in the metro core, close to where most jobs are concentrated. Urban renewal in the metro core will likely attract greater numbers of working-age people and families to live in higher density housing. Highly efficient and reliable transport connections between the region’s dispersed residential areas and Greater Newcastle’s employment areas is a priority for working age people.

**Young people’s access to education and training**

There is a greater proportion of young people in the centres of Greater Newcastle’s outer frame where families can enjoy being located by the water, bush or both. Access to schools for children in small, more isolated towns can be a challenge, most often being met by local bus services. However, a greater challenge for young people living in these outer areas is accessing out of school hours activities and sports, and as they transition from school, travelling to training opportunities and university campuses located in larger centres particularly if they do not hold a driver’s licence or have access to a vehicle. The introduction of flexible transport options offers the potential to assist this sector of the population.
Employment growth and change

Greater Newcastle currently has around 275,000 jobs. Most jobs are located in Newcastle (43%) and Lake Macquarie (27%) LGAs. There is a corridor of employment along the New England Highway towards Maitland (see Figure 11).

Zoned Employment Land in Greater Newcastle

Figure 11: Zoned employment land in Greater Newcastle, March 2017
(Source: Local Environmental Plans of five LGAs)
**Job density**

Newcastle city centre has the greatest employment density at over 57 jobs per hectare, more than double the next highest area of Hamilton/Broadmeadow at 22 jobs per hectare. Large employment precincts are also located at Cardiff-Glendale, Charlestown, Kotara, John Hunter and Callaghan and a corridor of employment that stretches along the New England Highway towards Maitland.

**Structural change**

A range of industries have a strong presence within Greater Newcastle. Over the next 40 years, the greatest employment growth is expected to come from knowledge intensive industries. These are services and businesses that provide professional knowledge. Examples include engineers and people employed in legal and accountancy services. The location of this type of employment tends to be clustered together in Central Business Districts (CBDS) or in special precincts.

Health and education employment is also expected to increase steadily. It is likely that this employment will be clustered around Greater Newcastle’s hospital and education precincts, including the university and TAFE campuses as well as schools.

The population serving industry will also continue to grow. These jobs are generally spread throughout a region and include occupations such as real estate agents, hairdressers and retail and hospitality workers.

Figure 12 shows the changing location of the predominant industry across Greater Newcastle. Growth in knowledge intensive industries is expected in the metro core as well as around Maitland and Newcastle Airport. Population serving employment will replace industrial employment as the largest employment category around the west of Lake Macquarie and Raymond Terrace.
Figure 12: Employment by industry type and location, 2016 and 2056
(Source: Department of Planning and Environment LU16, extrapolated to 2056)
Other major drivers of transport demand

Greater Newcastle has a number of major trip attractors, influencing travel movement.

Health

The John Hunter Hospital is the principal referral hospital for the Hunter and northern NSW. The John Hunter Health Precinct contains a range of medical and allied health services as well as private hospital services and one of two forensic services within NSW. The Precinct provides education, training and medical research facilities through a partnership between the Local Health District, University of Newcastle and Hunter Medical Research Institute (HMRI).

Other key metropolitan health precincts include East Maitland (planned), Calvary Mater Waratah, Warners Bay, Belmont, Lingard Merewether, Toronto, Gateshead, Cessnock, Kurri Kurri, Raymond Terrace, Charlestown and Morisset.

Education

Schools and tertiary education contributes to a large number of trips each day. The University of Newcastle’s Callaghan campus is a significant trip attractor for students and employees across Greater Newcastle and the broader region. NSW TAFE Hunter Institute has nine campuses within Greater Newcastle. The region’s tertiary institutes are expanding and increasing with the NeW Space campus and Japan’s Nihon University choosing Greater Newcastle for its first campus in Australia.

Retail

Throughout Greater Newcastle there are major shopping centres and retail precincts that generate trips by shoppers. Key destinations include Charlestown Square, Westfield Kotara and Homemaker Centre, Stockland Green Hills, Stockland Glendale as well as those within centres such as Newcastle city centre, Maitland, Cardiff, Toronto and Cessnock.

Recreation and tourism

Greater Newcastle benefits from its natural resources and strong heritage. Local residents and visitors are attracted to its coastline and beaches, national parks and open spaces. The world renowned Hunter Valley vineyards and wineries and major sporting venues are also strong trip generators. These tourism movements are supported by Newcastle Airport, the Newcastle Cruise Terminal as well as the region’s road and rail networks.
Figure 13: Newcastle’s beaches, a popular recreational trip destination for locals and visitors

Drivers of demand across Greater Newcastle

- **Central Maitland**
  - Retail and businesses: Maitland city centre retail and businesses
  - Civic: Maitland City Council Administration Centre, Maitland Art Gallery

- **Raymond Terrace**
  - Retail and business: Newcastle Business Centre, Port Stephens
  - Civic: Port Stephens Administration Centre, Raymond Terrace Library

- **Kotara**
  - Retail and business: Westfield Kotara and Homemaker Centre
  - Civic: Broadmeadow Station

- **City of Newcastle**
  - Retail and business: Newcastle city centre retail and businesses
  - Civic: Newcastle Courthouse, Newcastle Museum

- **Cessnock**
  - Retail and business: Cessnock city centre retail and businesses
  - Civic: Cessnock City Council Administration Centre, Cessnock City Library

- **Charlestown**
  - Retail and business: Charlestown Square and Pacific Highway retail
  - Education: Merewether High School (selective)

- **Nelson Bay**
  - Retail and businesses: Nelson Bay city centre retail and businesses
  - Civic: Nelson Bay Community Centre and public amenities

- **Morisset**
  - Health: Morisset Hospital
  - Education: Avondale College

- **Mayfield**
  - Health: John Hunter Hospital

- **John Hunter Hospital**
  - Health: John Hunter Hospital and Newcastle Private Hospital

- **Blackbutt Reserve**
  - Recreational: Blackbutt Reserve

- **Mayfield**
  - Health: John Hunter Hospital
  - Education: TAFE NSW – Newcastle Campus (Tighes Hill), TAFE NSW – Myall Lakes (Sunderland)

- **Macquarie**
  - Education: University of Newcastle, Callaghan
  - Health: Calvary Mater Hospital

- **Wickham Interchange and Queens Wharf Ferry Stop**
  - Transport: Transport Interchange and Queens Wharf Ferry Stop

- **Maitland**
  - Retail and business: Maitland city centre retail and businesses
  - Civic: Maitland Art Gallery

- **Port Stephens**
  - Retail and business: Stockland Glendale Shopping Centre
  - Education: TAFE NSW – Glendale Campus

- **Blackbutt**
  - Recreational: Blackbutt Reserve

- **Newcastle**
  - Retail and business: Newcastle city centre retail and businesses, Marketown Shopping Centre and Darby Street
  - Civic: Newcastle City Council Administration Centre, Newcastle Library, Newcastle courthouse, Newcastle Museum

- **Port Stephens**
  - Recreational: beaches, Lake Macquarie, parks and recreational areas

- **Greater Newcastle**
  - National and state roads and highways
  - Regional roads

Figure 14: Other drivers of demand across Greater Newcastle
Integrating land use and transport

The DPE’s Hunter Regional Plan 2036 recognises key employment, educational, health, industrial and recreational hubs such as Newcastle city centre, Central Maitland, Hunter Sports and Entertainment Precinct (emerging), Kotara, Charlestown, Cardiff-Glendale (emerging), Newcastle port, Newcastle Airport, John Hunter Hospital and the University of Newcastle. The Hunter Regional Plan 2036 focuses on connecting these locations through an integrated transport network to further strengthen the economy contained within them and support a growing population.

To do this, the Plan identifies locations where growth is expected to occur across Greater Newcastle. It is expected within its:

- **14 strategic centres**: Broadmeadow (emerging), Central Maitland, Callaghan, Cessnock, Charlestown, East Maitland, Cardiff-Glendale (emerging), John Hunter Hospital, Kotara, Kurri Kurri, Morisset, Newcastle city centre, Nelson Bay, Raymond Terrace, plus global gateway transport hubs of Newcastle Airport and Newcastle port

- **Urban renewal corridors**: including Charlestown to Belmont, Glendale to Cardiff, Newcastle City Centre to Broadmeadow, Kotara and Mayfield

- **Growth areas**: such as Newcastle–Lake Macquarie Western Corridor and Maitland Corridor.

Strategic centres are centres of activity and employment. They contain clusters of professional, retail, health and education services and are forecast to be major drivers of the economy into the future. Newcastle city centre is the heart of Greater Newcastle, the location of key headquarters, businesses and services.

Urban renewal corridors are precincts identified for a greater intensification of residential and commercial development and are generally along key transport corridors.

Growth areas are large areas that have been identified for new housing developments, supporting an increase in population into the future.

The Hunter Regional Plan 2036’s vision is for 95 percent of Greater Newcastle’s residents to live within 30 minutes of a strategic centre. To achieve this, the development of catalyst areas has been identified in the Greater Newcastle Metropolitan Plan 2036.

Catalyst areas are strategic centres and major employment precincts that need a collaborative approach to the delivery of new homes and jobs. They include Newcastle city centre, Beresfield/Black Hill, Broadmeadow, Cardiff-Glendale (North West Lake Macquarie), Callaghan, East Maitland, John Hunter Hospital, Kotara, Newcastle port, Tomago and Williamtown.

Figure 15 shows areas where the highest population and employment densities are concentrated within Greater Newcastle. The majority of these are within the metro core. While some strategic centres have concentrations of population and employment, many do not. Therefore, there is a need for travel across Greater Newcastle for work.
Supporting connections to, from and within strategic centres, urban renewal corridors, growth areas and employment areas is important to make it easier for our customers to get to the places they need to travel to. This includes travelling for work and to undertake business or to education sites e.g. schools, TAFE and the University of Newcastle; key retail areas; health facilities; sporting precincts and the airport.
Understanding travel behaviour

To provide appropriate transport services and infrastructure into the future, it is vital to have an understanding of how, where and why people travel to, from and within Greater Newcastle.

Transport network

Figure 16 provides an overview of the key road, rail and cycleway networks in Greater Newcastle.

Figure 16: Existing transport network
How and why people in Greater Newcastle travel

Most people travel in Greater Newcastle by private vehicle (over 80 percent of all trips). Public transport use is low. However, there are strong rates of active transport, with more than 13 percent of all trips made by walking or cycling.

Most trips in Greater Newcastle are for discretionary purposes such as shopping, social and recreational trips. These are trips where people can choose the timing and/or destination for their travel. As these trips are generally shorter and within the region, there is an opportunity to support more sustainable travel options for these trips.

Figure 17: Mode of travel in Greater Newcastle
(Source: Household Travel Survey, 5 year pooled data – 2011/12-2015/16)

Commuting trips occur primarily in the AM and PM peaks. There is an opportunity for these to be provided by public or active transport, rather than private vehicle.
Over half of the trips made by Greater Newcastle’s residents are short journeys under 5km. There is an opportunity for these shorter journeys to be undertaken by walking or cycling.

Figure 18: Weekday trip purpose within Greater Newcastle by time of day
(Source: Household Travel Survey, 5 year pooled data – 2011/12-2015/16)

Figure 19: Percentage of trips made in Greater Newcastle, by distance
(Source: Household Travel Survey, 5 year pooled data – 2011/12-2015/16)
Road

Key road corridors in Greater Newcastle include the M1 Pacific Motorway, Hunter Expressway, New England Highway, Newcastle Link Road/ Newcastle Road, City Road (Pacific Highway), Charlestown Road /Lookout Road, Lake Road, Main Road, Maitland Road and Industrial Drive. These roads carry the largest volumes of traffic and are important in providing through movements as well as, north-south and east-west connections within Greater Newcastle.

Figure 20 and Figure 21 show road capacity across Greater Newcastle in the AM peaks in 2016 and 2056. Examples of roads currently approaching capacity in the AM peak include Maitland Road (heading towards Newcastle city centre), Cormorant Road (both directions), Newcastle Road (heading east), Toronto Road (heading north) and Lookout Road (heading north).

It is projected that traffic volumes will significantly increase in the next 40 years. Figure 21 shows road capacity in 2056 without any transport improvements, but with increased travel demand. This figure illustrates that without investment and changes to travel behaviour, a significant number of key corridors in the metro core will be approaching capacity. Roads surrounding the strategic centres of Maitland, East Maitland, Metford, Raymond Terrace, Morisset and Cessnock will also be approaching capacity.
Figure 20: AM Peak road volumes, 2016
(Source: Strategic Travel Model)
AM peak road volumes 2056

2056

Key

- Main Roads
- Rail Line
- Airport
- Strategic Centre

Road Volume/Capacity

- > 0.8 (approaching capacity)
- 0.6 - 0.8 (below capacity)
- 0.4 - 0.5 (below capacity)
- < 0.3 (below capacity)

Data Source: STM future transport base, AM Peak

Figure 21: AM Peak road volumes, 2056
(Source: Strategic Travel Model)
Train

Greater Newcastle is serviced by Intercity and NSW TrainLink regional rail services. The two Intercity lines are the Central Coast and Newcastle line (Figure 22), providing connections to the Central Coast and Greater Sydney and the Hunter line (Figure 23), providing connections between Newcastle, Dungog and Scone. Service frequencies range during the day.

Figure 22: Central Coast and Newcastle line

Figure 23: Hunter line
Within the Intercity network, Opal data represented in Figure 24 shows that the stations generating the most use are Hamilton (former temporary access point into Newcastle city centre), Morisset, Broadmeadow, Warabrook (University of Newcastle) and Cardiff.

**Daily Greater Newcastle train tap on/off counts**

![Map of Greater Newcastle train tap on/off counts](source: 21 March 2017, Opal data)

**Key**
- Main Roads
- Rail Line
- Airport
- Strategic Centre

**Train – Opal tap on/tap off counts**
- <100
- 100 - 1000
- 1000 - 2000
- 2000 - 4000

Figure 24: Daily Greater Newcastle train tap on/off counts, March 2017, Opal data

Figure 25 shows travel volumes on the Intercity network in 2016 and 2056. Increased passengers are expected to travel north from Wyee, south from Cardiff and east from Metford in the AM peak.
AM peak trip volume by rail, 2016 and 2056

2016

2056

Key

- Main Roads
- Airport
- Strategic Centre

Trip Volume (Rail)

- <1k
- 1 - 2k
- 2 - 5k
- 5 - 7.5k

Source: Strategic Travel Model

Figure 25: AM peak trip volume by rail, 2016 and 2056
(Source: Strategic Travel Model)
NSW TrainLink regional services provide connections north to Brisbane via the east coast (Figure 26) and to Armidale and Moree via the Hunter and New England North West regions. There are three services a day travelling north and one a day to Armidale/Moree. These services also provide connections to Greater Sydney.

Patronage data (2014) for NSW TrainLink regional rail services shows that people travelling to Greater Newcastle stations (Fassifern, Broadmeadow and Maitland) on the northern corridor (services between Sydney and Brisbane), are primarily travelling from Sydney (Sydney Central, Strathfield and Hornsby), Casino (connecting point for coach services on North Coast), Coffs Harbour, Wauchope (connection to Port Macquarie) and Taree. People travelling from Greater Newcastle stations on this corridor primarily travel to Sydney (Sydney Central, Strathfield and Hornsby), Casino, Taree, Coffs Harbour and Brisbane.

For the north west corridor (services between Sydney and Armidale/Moree), patronage data (2014) for NSW TrainLink regional rail services shows people travelling to Greater Newcastle stations (Fassifern, Broadmeadow and Maitland) primarily from Sydney (Sydney Central, Strathfield and Hornsby), Tamworth, Armidale, Moree and Gunnedah. People travelling from Greater Newcastle stations on this corridor are also primarily travelling to these stations.

**Coach**

Three coach operators currently provide scheduled, public transport connections between Greater Newcastle and regional and capital city destinations:

- NSW TrainLink
  - Newcastle – Taree
  - Trialling services between Newcastle – Tamworth

- Sid Foggs
  - Newcastle – Dubbo

- Greyhound
  - Sydney – Brisbane, via Newcastle
Within Greater Newcastle, there are five contract areas in which bus services are provided:

- Contract area 1: Rover Coaches
- Contract area 2: Hunter Valley Buses
- Contract area 3: Port Stephens Coaches
- Contract area 4: Hunter Valley Buses
- Contract area 5: Newcastle Transport
Opal fares are available on services operated by the bus companies listed above. Current travel opportunities across contract areas are limited or infrequent in some cases, and travel between major destinations across the region can often require interchange between two or more buses.

In January 2018 Newcastle Transport introduced a new timetable and revised bus routes to reflect passenger travel demand. This has seen an increase in patronage since the beginning of the year.

Figure 27: Outer Metropolitan Bus Contract areas
Public transport data shows key places people travel to and from in Greater Newcastle using the public transport network. However, it only reflects the existing network. Despite this limitation, bus patronage data shows strong demand for travel to and from key destinations such as Charlestown Square shopping centre, University of Newcastle, Stockland Jesmond shopping centre, Stockland Glendale shopping centre as well as schools across the region. This is represented in Figure 28.

**Daily Greater Newcastle bus tap on/off counts**

![Map of Greater Newcastle showing bus tap on/off counts](image)

**Key**
- Main Roads
- Rail Line
- Airport
- Strategic Centre

**Bus-Opal tap on/tap off counts**
- <100
- 100 - 500
- 500 - 1000

Source: 21 March 2017, Opal data

Figure 28: Daily Greater Newcastle bus tap on/off counts, March 2017, Opal data
Ferry

A ferry service operates between Stockton and Queens Wharf in the Newcastle city centre. In 2017, an average of 1,300 trips were made each day on the service. Newcastle ferry patronage has grown over the past year with January 2018 seeing a record 48,000 trips; an increase of 9,000 trips compared to the number taken in January 2017.

Point-to-point

Point-to-point services include on demand services, taxis, rideshare and Community Transport.

A Newcastle Transport On Demand bus trial currently operates in addition to existing scheduled bus routes in Dudley, Whitebridge, Mount Hutton, Windale, Tingira Heights, Eleebana, Warners Bay, Gateshead and Charlestown areas (see Figure 30). Transport is available from 9am to 4pm on weekdays, 7am to 6pm on Saturday and 9am to 6pm on Sunday.
Services can be booked using a Smartphone app or by a regular phone call. Since its commencement, patronage has grown from 232 rides in January 2018 to 1,318 rides in April 2018.
A number of taxi operators service Greater Newcastle, with many offering services across the day with a range of vehicle types and configurations available to cater for a diverse passenger population.

Uber and other on demand operators also provide ridesharing services in Greater Newcastle. They offer a range of vehicle types and services, including drivers who assist passengers into vehicles and can accommodate folding wheelchairs, walkers, and scooters, as well as fully wheelchair accessible vehicles.

The University of Newcastle has implemented a carpooling app to match riders with drivers. Drivers get access to exclusive carpooling parking spaces to promote less single occupancy vehicle trips.

Community Transport services provided under contract to Transport for NSW are available for eligible clients (primarily frail aged people) living in their own homes in the five local government areas of Greater Newcastle. Transport is provided by bus or car, depending on the type of transport suitable for the journey, and some vehicles are wheelchair accessible. Typically clients receive transport to medical appointments, shopping and social outings.
Access to public transport

The Public Transport Accessibility Level (PTAL) is a measure of accessibility from a point of interest on the public transport network. It defines accessibility in terms of the time taken to walk to a public transport access point (such as a bus stop or railway station), the average waiting time for a public transport service at that access point and the frequency of service.

For example, a location within 400 metres of a public transport stop where services operate every 15 minutes is ranked as excellent, while another location at a distance greater than 400 metres to a stop or where a stop has less frequent services is ranked less than excellent. Areas that are located far from a stop are not ranked at all.

As shown in Figure 33, data for 2015 shows that most strategic centres within Greater Newcastle have excellent PTAL ratings in the AM peak. These are concentrated in Newcastle city centre. Areas outside the metro heart generally have less than excellent ratings throughout the day.

The PTAL suggests that new service options could be investigated to cater for people living outside the metro heart who need to travel to their local centres, such as for shopping and services, between the weekday peak hours and on weekends.
Figure 33: Public transport accessibility across Greater Newcastle, 2015
(Source: TfNSW PTAL, July 2015)
Active transport

Greater Newcastle has some world class cycleway infrastructure, but the network is not connected. There is more than 900 kilometres of existing cycleways within the Greater Newcastle area (Figure 34), including 296 kilometres of off road paths. Examples include the popular Fernleigh Cycleway, Warners Bay Foreshore and the Lake Trail at Walka Water Works in Oakhampton.

Newcastle City Council, Lake Macquarie City Council, Maitland City Council and Cessnock City Council each have comprehensive Bike Plans that identify a network of local cycleways that would complete the network to schools, shops, sports fields and other local centres. More than 287 kilometres of planned off road paths are identified in local government bike plans – doubling the existing network.

Figure 34: Greater Newcastle existing regional cycleway network
Aviation

Greater Newcastle has airports at Williamtown (Newcastle Airport), Cessnock and Belmont.

Newcastle Airport at Williamtown is one of the largest combined defence and civilian aerodromes in Australia. In 2017, 1.27 million passengers passed through Newcastle Airport. Flight destinations include Sydney, Brisbane, Gold Coast, Melbourne, Canberra, Dubbo, Taree, Ballina and Adelaide. Figure 35 shows Newcastle Airport’s connections to destinations outside NSW as in February 2018.

Cessnock and Belmont Airports offer private flights and training opportunities.

By 2036, Newcastle Airport’s projections show a minimum of 2.6 million passengers using Newcastle Airport each year. However, there are aspirations to fly as many as 5 million passengers a year by 2036. There are further opportunities for freight and international flights, connecting people and goods to the Asia Pacific region and beyond.

Figure 35: Regional NSW Interstate Aviation Connections (February 2018)
Where people in Greater Newcastle travel

Based on data from the Household Travel Survey (5 year pooled data - 2011/12-2015/16), the majority of trips by Greater Newcastle residents occur within the five local government areas. Only five percent of all trips by residents on a daily basis are to/from destinations outside Greater Newcastle. Of these trips, there is a strong pull to the south, towards the Central Coast (73 percent of trips made outside Greater Newcastle).

This reflects Greater Newcastle’s strong self-containment and strength as a Global Gateway City. This is especially clear when compared with the Central Coast where 15 percent of all trips by residents are to/from outside the region and nearly a third of Central Coast workers leave the area for work.

However, Greater Newcastle’s dispersed population and large numbers of people living in peninsulas presents a challenge in providing transport services and infrastructure between the various destinations and centres.

Currently, strong travel demand (over 1,000 trips a day) exists between:

- Maitland and Metford, via East Maitland
- Broadmeadow and Newcastle city centre
- Charlestown and Newcastle city centre
- Kotara and Charlestown/Broadmeadow
- Newcastle port and Newcastle city centre.

To a lesser extent, demand to/from these centres also extends to other locations such as Raymond Terrace, Cessnock, Nelson Bay and Morisset.
Daily trip demand between strategic centres in Greater Newcastle

2016

Source: TfNSW Strategic Travel Model, 24hr demand

Figure 36: Daily trip demand between strategic centres in Greater Newcastle, 2016
(Source: Strategic Travel Model)
At a LGA level, large volumes of people travel between Lake Macquarie and Newcastle LGAs each day and to a lesser extent between Maitland and Newcastle LGAs as well as Port Stephens and Newcastle LGAs. Most growth is expected to occur between Newcastle and Lake Macquarie LGAs.

**Daily trip demand within Greater Newcastle across local government areas**

**2016-2056**

**Key**
- Main Roads
- Airport
- Strategic Centre

<table>
<thead>
<tr>
<th>LGA</th>
<th>2016: no. trips</th>
<th>2036: no. trips (%) increase 2016-2036</th>
<th>2056: no. trips (%) increase 2016-2056</th>
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<tbody>
<tr>
<td>Lake Macquarie</td>
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<td>Maitland</td>
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<td>Port Stephens</td>
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**Trip Demand within areas of Greater Newcastle (24hr)**

**Location**
- 2016: no. trips
- 2036: no. trips (% increase 2016-2036)
- 2056: no. trips (% increase 2016-2056)

**CAUTION:** Demand limited to STM area. Demand to/from other areas is not included. Trip counts have been rounded.

Data Source: STM standard Future Transport, TPA, TfNSW

Source: Strategic Travel Model

Figure 37: Daily trip demand within Greater Newcastle across local government areas, 2016-2056
(Source: Strategic Travel Model)
We need to match transport services and infrastructure with the level of demand generated. Clear, strong transport corridors should be provided between centres of high demand. There should be opportunities to connect to these corridors in areas where there is a lower level of demand.

These strong transport corridors will experience increased pressure into the future, especially as the majority of new housing and population growth will be located along the different development fronts in the metro frame and throughout the metro core as infill. Planning for travel options, such as effective public and active transport, is necessary to ensure efficient access for our customers.

**Where people travel to/from Greater Newcastle**

Journey to Work data from the 2011 Census provides an understanding of the travel between Greater Newcastle and other regions. Close to 14,000 people travel into Greater Newcastle for work. Most travel from the Central Coast (47%), Greater Sydney (11%) and Dungog LGA (10%).

A larger number travel outside the Greater Newcastle area for work (22,444 people). They primarily travel to the Singleton LGA (27%), Central Coast (21%) and Greater Sydney (19%).
Figure 38: Where people travel from to work in Greater Newcastle
(Source: ABS 2011 Census, Journey to Work)
Travel demand forecasts for travel to/from the Greater Newcastle area are limited due to the study area of the Strategic Travel Model. However, forecasts show continued increased demand for travel west into the broader Hunter region as well as south towards the Central Coast and Greater Sydney regions.
CHAPTER 2

Our Vision for 2056
Our vision is for Greater Newcastle’s residents, employees and visitors to have and use a world class transport system that meets everyone’s needs.

Achieving this vision will require 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 our wide range of customers. It will be built on the transformative light rail project currently underway and the recent introduction of more frequent bus and ferry services and trials of on demand services by Newcastle Transport – a servicing model that has applicability for the rest of Greater Newcastle and beyond.

**World class transport system**

In order to meet the vision of providing a world class transport system that meets everyone’s needs, we need to continue to plan for and build an efficient network that:

› Provides quality transport connections to/from and within strategic centres and key locations such as Newcastle Airport

› Provides an easy to understand and frequent public transport network to service customers, with a clear hierarchy of services, providing customers with real travel choice – this will include turn up and go services on key high demand routes through to on demand services to serve more geographically dispersed communities, and planning for significant urban growth areas

› Improves interchanging between transport modes and services to facilitate a seamless travel experience.

To ensure the best value for money is achieved with our transport services and infrastructure, we need to make sure that the level of service we provide meets the demand for those connections.

Additionally, as Greater Newcastle grows and people continue to drive, there will be increased pressure on the road network. We need to work with stakeholders to develop travel demand strategies to re-balance travel demand (re-time, re-mode, re-route and reduce) to ensure that the expected increase in private vehicle trips does not lead to congestion and unacceptable journey times and reliabilities. These strategies will also benefit businesses and communities in managing their time. We need to ensure that public and active transport are viable options for travelling to/from and within Greater Newcastle.
Transitioning to sustainable transport modes

There is an opportunity to support Greater Newcastle’s development as a Global Gateway City by “getting ahead of the curve” and supporting its transition into Stage 3 of the city development cycle (as referred to in Figure 41).
Greater Newcastle is currently within Stage 1 and 2 of the city development cycle. With increased investment and focus on more efficient and sustainable modes of transport (public and active), rather than car use, there is an opportunity to support the development of a high quality public realm. This has flow on effects in creating a more liveable and global city, attracting businesses, visitors and new residents from across the world.

This process has already started with the transformation of the city centre as a result of the new light rail. Newcastle Transport’s clear public transport network hierarchy with more frequent bus and ferry services and an on demand trial area will continue to support this transition.

Ongoing improvements to make public and active transport more viable options across the whole of Greater Newcastle will include:

- Development of a strong public transport hierarchy across the Greater Newcastle area, connecting where people live to where they want to travel. Bus routes should reflect customer’s travel needs, with priority given to buses on key corridors to provide comparable, if not quicker, journey times compared to private vehicles. Service levels should match the travel demand, with turn up and go frequencies on key corridors.
Better integrating Greater Newcastle’s train stations with the surrounding land uses, including providing feeder transport services such as on demand services, bike share, bike parking, footpaths as well as making sure adjoining development responds to the stations through good urban design

Reviewing car parking provision across Greater Newcastle and limiting parking in centres where strong public transport exists and exploring opportunities for park and ride, car pooling and car sharing services

Encouraging and working with stakeholders to develop travel demand management policies (re-time, re-mode, re-route and reduce travel) such as promoting people working from home or working with employers to promote sustainable working and organisational practices, travelling in off peak periods or reallocation of road space to reduce the number of single occupant vehicle trips

Collaborating with local councils and key stakeholder groups to develop a safe and connected cycling network and creating more walkable places across Greater Newcastle.

Future mobility and services

In developing a world class transport system, there is an opportunity in Greater Newcastle to trial and integrate new mobility options and service models as described in the Future Transport Strategy.

New technologies for connected, automated and electric vehicles will improve public and private modes of transport and freight vehicles. An important step in automated vehicle technology was the 2017 NSW Government legislation enabling the Minister for Roads, Maritime and Freight to approve trials of automated vehicles. This gives us an opportunity to properly assess these vehicles’ ability to meet our policy outcomes of improving safety, boosting service frequencies and reducing congestion.

Personalised mobility devices, like e-bikes and motorised scooters, offer alternatives for short trips to city centres and work locations. These technologies can include assisted mobility devices that are appealing for older people or people with mobility constraints because they require less physical effort than walking or cycling and people can use them for longer trips and over more difficult terrain, even with a lower fitness level.

Ever expanding data sources and applications are enabling greater integration of services and new service models to be developed and adopted. The emergence of rideshare companies has already significantly changed the point-to-point market, with new online service providers emerging and being embraced by customers. The NSW Government’s point-to-point reforms made in 2017 have opened up the market for new transport services providers to meet demand.

The next wave of data-enabled transport service models, known as Mobility as a Service (MaaS), will enable customers to plan and pay for their journeys across different transport service providers via a single customer interface, such as a mobile phone app. MaaS relies on sharing real time information to help customers optimise their journeys through a single MaaS provider. It
enables customers to plan and purchase their end-to-end journey from a retailer (most likely via an app) choosing from a range of travel options, such as travelling by public transport, rideshare or bike hire. In real time, the app then guides the customer through their journey.

Data exchanged between customers and service providers via a MaaS platform helps providers offer more personalised services and can also link customers to non-travel related products such as restaurant delivery, event ticketing and retail. As technology unlocks new mobility and service possibilities, customer data sharing presents an opportunity for customers to have unprecedented input into how transport services are delivered. One example is the emergence of on demand bus services currently being trialled in Greater Newcastle and other forms of shared transport that will allow customers to directly influence where their local services travel on a day-to-day basis.

The emergence of new service providers will result in customers having more choice than ever. However, it is important that the transport system also remains easy-to-understand. In high demand areas, frequent, high capacity corridors will be provided to move the majority of people. These will be complemented by more flexible or on demand services on local corridors.

**Mode share targets**

Greater Newcastle has strong potential to increase the share of trips that people make on public transport, walking and cycling. Using data from the Household Travel Survey (five year pooled data between 2011/12 and 2015/16), we know that during the week three per cent of trips in Greater Newcastle are undertaken by public transport. Despite this, Greater Newcastle has one of the highest shares of people walking and cycling in the metropolitan areas of Sydney, Wollongong, Central Coast and Hunter with 13 per cent of trips made by foot or bicycle.
Looking at the journey to work, Greater Newcastle has relatively low shares of public transport and walking and cycling in comparison to similar cities internationally (Figure 43).

Newcastle Transport’s public transport network has already shown improvements to the number of people using public transport. As this model continues to develop, along with a more extensive public transport network, Greater Newcastle could achieve significant increases in the portion of trips taken by bus, train, light rail, ferry and on demand services. We could also see a significant increase in walking and cycling with a safe and connected regional bicycle network and people living closer to where they work and play.
Our target is for 25 per cent of total trips within Greater Newcastle to be made by public transport or walking and cycling by 2056. This will mean a 4.3 per cent shift to public transport and a 3.7 per cent shift to walking and cycling.

We can meet these targets by:

- Implementing travel demand management policies and behaviour change initiatives as well as infrastructure, supported by Greater Newcastle Metropolitan Plan 2036’s goal of 60 percent infill development
- Increasing the frequency, reliability and directness of bus services along Greater Newcastle’s key corridors, including urban renewal corridors, making bus travel more competitive with private vehicle travel (recently introduced in Newcastle Transport operating area)
- Introducing new point-to-point and on demand services in areas not well served by scheduled services
Encouraging the use of car pooling and park and ride

Connecting the regional cycleway network and providing safer ways for people to get to where they are going by bike

Focusing urban renewal development around train stations, improving train services and improving connections to these services

Completing Newcastle light rail and investigating opportunities for expansion

Extending the ferry network to the Newcastle Interchange

Public transport

There are opportunities to improve public transport within Greater Newcastle. We can build on the work undertaken by Newcastle Transport to make changes to the network to deliver bus routes and frequencies that meet customer needs. This includes measures to support public transport priority. We will work towards:

- Improved integration and interchange between modes/services to enable seamless customer experience
- Improved time of day coverage and service frequency, supporting connections to strategic centres and key destinations
- Expanding 30 minute catchments for public transport
- Provision of bus priority on key demand corridors, including turn up and go frequencies, to support quicker and more reliable journeys competitive with private vehicle travel
- Bus headstart services (these are bus routes implemented in new growth areas to encourage early public transport use) to provide a public transport travel option as soon as people move into their new homes
- Protecting corridors to enable the light rail network to extend and support population and employment growth
- Extension of the ferry service to Newcastle Interchange and consideration of an on demand special events service to support the Newcastle Cruise Terminal
- Deployment of on demand services across Greater Newcastle to support travel options in lower density areas as well as reduce congestion during peak periods such as events within the Hunter Valley or sporting matches at Broadmeadow
- Investigating rail corridor infrastructure investment programs that result in faster journeys for customers – see Case Study on Faster Rail Business Case for the Sydney-Newcastle corridor
- Station upgrades and integration between the stations and surrounding land uses are needed to support increased public transport travel
Supporting through appropriate services long distance travel outside the area, connecting people to cities and centres in the North Coast, Hunter, New England North West, Central West and Orana, Central Coast and Greater Sydney

- Car share opportunities across Greater Newcastle to reduce the need for private vehicle ownership as well as support the accessibility of visitors to the region
- Increased opportunities for park and ride at key locations to support public transport travel as well as formalising car pooling for people travelling along key corridors such as the M1 Pacific Motorway and Hunter Expressway.

### Faster Rail Business Case for the Sydney - Newcastle corridor

The 2017 Federal Budget included a commitment by the Australian Government to investigate improvements to the rail connections between our cities and surrounding regional areas through $20 million in funding to support the development of up to three faster rail business cases across Australia.

In March 2018 the Australian Government announced that it will provide matching funding for the development of a business case to facilitate faster passenger rail services between Sydney and Newcastle.

The business case will investigate works such as reducing track curvature, deviations and realignments, removal of level crossings, junction rearrangement and better segregation of passenger and freight services. This could result in travel times between Sydney and Newcastle being reduced from approximately 3 hours to 2 hours.

Business cases are expected to be delivered to the Australian Government in the next 12 to 18 months. They will need to demonstrate faster rail travel times through new or upgrades to the existing rail infrastructure. Completed business cases will then be considered in the context of the Australian Government’s wider infrastructure priorities and future Budgets. Any future funding commitments will take into account state and private sector financial support.

Figure 45: Cardiff Station upgrades completed as part of the Transport Access Program
Active transport

Capitalising on the strong active transport use within Greater Newcastle, there is an opportunity for trips within centres as well as trips less than 10km to be made by walking or cycling. We will support the development of networks to make sustainable transport a real travel choice as part of the Walking and Cycling Program. Funding within this Program supports infrastructure as well as behavioural change programs and bicycle parking.

Using the bicycle plans developed by Greater Newcastle’s Councils as well as the Newcastle CycleSafe Network, we have developed a regional bicycle network to support travel by bicycle across Greater Newcastle. Figure 46 shows the existing and proposed regional connections. We will work with local councils to deliver cycleway improvements to support a Greater Newcastle Regional Bicycle Network.

![Greater Newcastle Regional Bicycle Network](image_url)
The greater density of residential and employment land uses within NSW’s Global Gateways and Satellite cities (i.e. Greater Newcastle, Wollongong and Gosford) presents a greater opportunity to increase sustainable mode shares compared to other regional areas. The availability of robust evidence on travel patterns (via Household Travel Survey data) also enables monitoring of performance throughout the day in these areas.

Newcastle CycleSafe Network

The Newcastle CycleSafe Network is a community led vision to complete a family-safe regional cycleway network connecting destinations across Newcastle and Lake Macquarie. It is supported by TfNSW, NRMA, University of Newcastle, Heart Foundation, Bicycle NSW, The Tom Farrell Institute and the Newcastle Cycleways Movement Inc.

The network corresponds with cycleways identified in the Newcastle and Lake Macquarie Council bike plans. It includes 90 kilometres of existing paths and proposes 140 kilometres of new facilities connecting schools, shops, work places and other destinations. The aim is to make walking and cycling a viable alternative to car travel by targeting trips less than two kilometres for walking and trips less than 10 kilometres for cycling.

The Regional Bicycle Network for Greater Newcastle identified in this plan includes the CycleSafe network and extends the network out to Maitland, Cessnock, Raymond Terrace and Nelson Bay.

Figure 47: Cycleway along The Bathers Way, Newcastle
Newcastle eBike On Demand Service

We have put in place an on demand eBike (electric bike) pilot service in the metro core of Greater Newcastle.

Nineteen docking stations with 100 eBikes and helmets have been installed in various locations for customers to pre-book, collect and ride at a time and place that suits them 24 hours a day, seven days a week.

The trial allows users to take short trips using a fleet of public bicycles distributed within a physical or digital network. It includes a self-serve, charging station, lightweight power-assisted bikes for people with all levels of fitness and ability, a user-friendly web platform and intelligent fleet management.

The e-bikes are securely locked and automatically charged in the docking points.


Figure 48: Location of eBike docking stations around Newcastle
Road use

With increasing population and strong private vehicle use, congestion on the road network will occur. With improvements to public and active transport, there is an opportunity to reconsider the role and function of roads across Greater Newcastle. We will work towards:

› Completing a NSW Road Classification Review that considers how roads are classified across the state
› Undertaking Road Network Strategies across Greater Newcastle to inform the development of longer term priorities for the Hunter state road network
› Addressing pinch points in the road network and informing the program of road network optimisation improvements
› Undertaking a car parking review to evaluate and prioritise car parking availability and use as well as considering car share and car pooling opportunities
› Developing travel demand management policies and transport optimisation programs to rebalance demand against service and infrastructure provision
› Working with key stakeholders in the application of the movement and place framework to support travel and places through Place Plans.

Adopting the movement and place framework and principles in centres has the potential to transform the way those communities operate. The movement and place framework is all about creating places and experiences which locals and visitors will seek out. It acknowledges that both customer and community needs are different and the street environment needs to provide different functions – moving people and goods, while also being destinations for people. The framework will enable us to plan, design and operate the road network to meet these different needs. The movement and place framework is explored further in Customer Outcome 3 within Chapter 3.

Figure 49: Different street environments under the movement and place framework
NSW Road Classification Review

Currently, road funding and management arrangements between State and Local Government are based on a three tier hierarchy of State, Regional and Local Road classifications.

The NSW Government, through Roads and Maritime Services (RMS), funds and manages State Roads and provides funding assistance to councils towards their management of Regional Roads.

A review provides an opportunity to make adjustments to the classification process and ensure an up to date network that meets the social and economic needs of the community and industry. The last review took a number of years to complete and the three year implementation process concluded in mid-2012.
Maitland Network Strategy

The objectives of the Maitland Network Strategy are to identify the key current and future challenges that impact the function and performance of the road network including transport demand, road safety, along with future land use development impacts. It will propose a framework to manage the road network over the next 20 years.

The Strategy is being completed in partnership with Maitland City Council for a shared understanding of the strategic transport network. Key local roads are included in the scope of the study and challenges and opportunities are developed without special consideration to the classified road network. The transport network around Maitland has restrictions from flood plains, rivers and the heavy rail line. As such, it is important to acknowledge the role of local roads in reducing the demand on the New England Highway.

The Strategy will provide a mechanism for Maitland City Council to seek funding for upgrades on the strategic local government network, with justification on how various links fit onto the overall road network provided through the Strategy. It will provide strategic merit for any future funding proposals and an evidence based methodology to support this.

RMS will work with other Councils across Greater Newcastle to deliver Network Strategies relevant to their local government areas.

Figure 50: New England Highway, East Maitland
Aviation

Newcastle Airport is currently expanding, with recent investment in the Airport’s facilities and major upgrades planned to the RAAF Base to accommodate new Joint Strike Fighters (F-35). These upgrades will create a cluster of economic activity and new jobs at Williamtown. The Airport may also have a larger role in the future in supporting freight movements.

It will be increasingly important to ensure efficient transport connections are available between the airport and surrounding regions. We will continue to support the development of Newcastle Airport by providing public transport connections across Greater Newcastle. Road improvements, committed and identified for investigation, include Nelson Bay Road, Cormorant Road, M1, Hexham, Raymond Terrace upgrades and Tomago Road. These improvements will result in improved freight and passenger vehicle connections.

We also acknowledge the opportunity that the point-to-point reforms implemented in 2017 have had for opening up the market for transport services to meet demand.

Public transport and Newcastle Airport

A number of operators currently provide public transport connections between Newcastle Airport, the Greater Newcastle area and broader Hunter region.

Port Stephens Coaches currently provides 18 connections between Newcastle Interchange and Newcastle Airport on weekdays. The earliest service starts at 4:37am and the last service departs at 9:07pm. The travel time is approximately 30 minutes, which is comparable to the time it takes to drive the same distance.

Hunter Valley Buses provide 12 connections between Stockland Green Hills and Newcastle Airport on weekdays. The earliest service starts at 6am and the last service departs at 5pm.

Taxis and ridesharing services are available as well as other private operators like Hunter Connection Shuttle, Foggs Shuttle and Kroosn Shuttle Service to connect people from around Greater Newcastle to/from the airport.
Freight

The movement of freight through Greater Newcastle is very important to the economic function and development of the Hunter region and New South Wales. As Greater Newcastle grows and densifies, there will be increased pressure on the key road and rail networks transporting this freight. We will continue to protect these corridors from inappropriate development to ensure they can function into the future.

We have also identified a number of connections within Greater Newcastle to reduce the conflict between freight and residential land uses. These include:

› Lower Hunter Freight Corridor Protection – A future dedicated freight rail line to be constructed between Fassifern and Hexham, bypassing Newcastle while improving regional and interstate links

› Newcastle Inner City Bypass, Rankin Park to Jesmond – a 3.4 kilometre bypass between Rankin Park and Jesmond, to the west of John Hunter Hospital. The project includes new northern and southern interchanges and a western entrance to John Hunter Hospital. A pedestrian bridge is also being constructed over the road to the east of the northern interchange to replace a set of pedestrian signals. The pedestrian bridge is expected to start construction in mid 2019

› M1, Hexham, Raymond Terrace upgrades – upgrades to the strategic network of primary freight routes comprising of the New England Highway, M1 Pacific Motorway through to the Pacific Highway at Raymond Terrace and the strategic junction with the New England Highway and Hexham Straight.

More information on major road projects in the Greater Newcastle and Hunter region is available at http://www.rms.nsw.gov.au/projects/hunter/index.html. The NSW Freight and Ports Plan will detail further the vision for freight across NSW.
Greater Newcastle Freight Network

Key
- Main Roads
- Key Road Freight Corridors
- New or Upgraded Road
- New or Upgraded Freight Rail
- Greater Newcastle

Waterways
- Strategic Centre
- Port
- Airport

Figure 51: Freight network
Supporting Newcastle Port

Newcastle Port is the economic and trading centre for the Hunter region and northern NSW. It is a critical supply chain interface for the movement of cargo. Non-coal trades include fuel, fertiliser, wheat, mineral concentrates, alumina and project cargo such as wind turbines. Newcastle Port is the State’s primary coal export facility and Australia’s third largest port by trade volume, handling more than 167 million tonnes in 2017.

Regardless of the global future of coal, Newcastle Port will continue to be an important part of NSW’s current and future freight task. With significant underutilised capacity, the Port is planning to diversify and expand its import and export trade base in the long-term. The New Cruise Terminal facilities are expected to commence operating in 2019 and will further support tourism opportunities in the Hunter region.

Figure 52: Newcastle Port and Newcastle city centre
Network hierarchy

To support this vision, key links have been identified for Greater Newcastle. These links recognise the regional movements required (connections outside of Greater Newcastle) as well as the need to connect people within Greater Newcastle. This network hierarchy should provide the basis for future transport improvements across all modes.

**Greater Newcastle network hierarchy**

![Greater Newcastle network hierarchy map](image)

**Key**
- Inter-regional link
- Major intra-regional link (frequent network)
- Secondary feeder corridor

**Figure 53: Greater Newcastle network hierarchy**
Customer outcomes for Greater Newcastle
Our customers are at the centre of everything we do in transport. In Greater Newcastle our customers include the residents, visitors, business owners who use and rely on the transport system.

The overarching Future Transport Strategy articulates the transport vision for NSW for the next 40 years through six customer and network outcomes; A customer focus, Contributing to successful places, A growing economy, Safety and performance, Accessible services, and Financial and environmental sustainability.

This chapter considers these outcomes further and details ten outcomes from a regional perspective and what they will mean for the people, visitors and businesses of Greater Newcastle and how transport supports the emergence of the city as Global Gateway. With the population of Greater Newcastle projected to grow to around 760,000 people by 2056, enhancing customer satisfaction with transport is our ongoing commitment.
Regional NSW Customer Outcomes

<table>
<thead>
<tr>
<th>Future Transport 2056 Statewide outcomes</th>
<th>Regional NSW customer outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Focused</strong></td>
<td>Convenient and responsive to customer needs</td>
</tr>
<tr>
<td>1. Flexible services are an integral part of the transport system helping to deliver reliability</td>
<td></td>
</tr>
<tr>
<td>2. A transport system that adapts to and embraces new technology</td>
<td></td>
</tr>
<tr>
<td><strong>Successful Places</strong></td>
<td>Sustaining and enhancing the liveability of our places</td>
</tr>
<tr>
<td>3. 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</td>
<td></td>
</tr>
<tr>
<td>4. Supporting centres with appropriate transport services and infrastructure</td>
<td></td>
</tr>
<tr>
<td><strong>Growing the Economy</strong></td>
<td>Connecting people and places in the growing regions</td>
</tr>
<tr>
<td>5. Changes in land use, population and demand, including seasonal changes, are served by the transport system</td>
<td></td>
</tr>
<tr>
<td>6. Economic development is enabled by regional transport services and infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

Figure 55: Regional NSW customer outcomes 1-6
<table>
<thead>
<tr>
<th>Future Transport 2056</th>
<th>Regional NSW customer outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide outcomes</td>
<td></td>
</tr>
<tr>
<td>Safety and Performance</td>
<td>Safely, efficiently and reliably moving people and goods</td>
</tr>
<tr>
<td></td>
<td>7. A safe transport system for every customer with zero deaths or serious injuries on the network by 2056</td>
</tr>
<tr>
<td></td>
<td>8. A transport system that is resilient to significant weather events including floods, fog and bush fires</td>
</tr>
<tr>
<td>Accessible Services</td>
<td>Accessible for all customers</td>
</tr>
<tr>
<td></td>
<td>9. Accessibility to employment and services such as health, education, retail and cultural activities within Regional Cities and Centres</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Makes the best use of available resources and assets</td>
</tr>
<tr>
<td></td>
<td>10. Customers enjoy improved connectivity, integrated services and better use of capacity</td>
</tr>
</tbody>
</table>

Figure 56: Regional NSW customer outcomes 7-10
Customer Outcome 1: Flexible transport services

Customer needs are met by flexible services which are convenient and responsive to customer needs

Flexible transport services mean transport services that can be tailored to meet the needs of customers. Rather than scheduled services that operate at fixed times or routes, flexible services are more responsive to individual needs or can be varied as demand changes in terms of times, routes, stops and vehicles.

Technology has enabled the emergence of new customer-focused and commercial applications of flexible transport, for example, point-to-point services (such as taxi and rideshare), Community Transport and MaaS. These new service models expand the travel choices available to customers who may have difficulty using scheduled public transport. This can include people with disability, people who are travelling out of scheduled service hours or who live or need to travel to destinations at some distance from public transport services.

uberWAV Pilot in Newcastle

The NSW Government’s point-to-point transport reforms have enabled rideshare services to flourish in NSW. New commercial options are now emerging in various locations to cater to different customer groups.

Expanding on their rideshare service, Uber launched a 12-month uberWAV pilot in Newcastle in December 2016. Specially equipped and certified wheelchair accessible vehicles are available for request through the Uber app in Newcastle. The vehicles are operated by top-rated local driver partners who choose to undertake third-party training with a Registered Training Organisation. All vehicles requested through the uberWAV option in the app are equipped with a rear-entry ramp, winch and restraints, enabling a wheelchair user to ride safely and comfortably.

The uberWAV pilot has been supported by several local service providers and representative bodies, including the Community Disability Alliance Hunter, Life Without Barriers, Castle Personnel, Northcott, Cerebral Palsy Alliance, Spinal Cord Injuries Australia and Lifestyle Solutions.
A large proportion of Greater Newcastle is rural, semi-rural or has low population and employment densities. It is often not cost effective to provide frequent scheduled public transport services to these areas due to their distance to centres and lower level of demand.

We also anticipate that areas within Greater Newcastle will be home to a large percentage of older people, particularly out towards Nelson Bay and around Lake Macquarie (refer to Figure 10). Older people are often reliant on friends and family or public transport, including Community Transport, to travel around.

The provision of flexible, on demand public transport services is an option for these areas. Flexible, on demand transport services enable customers to book personalised transport services to access services like key bus stops and stations as well as health services and shopping precincts when they need it.

Advances in technology will continue to enable opportunities to ensure that no one is left out and that people across Greater Newcastle will have more choice in how they travel to the places they need and want to go without having to rely on using a private vehicle.
On demand transport services trial in Newcastle

The first trial of on demand public transport in Greater Newcastle began in January 2018. Customers taking part in the trial can download an app connecting them with buses that will come right to their door or a convenient location in the Lake Macquarie area.

The on demand trial will operate in addition to existing routes during daytime off-peak periods and on weekends in Dudley, Whitebridge, Mount Hutton, Windale, Tingira Heights, Eleebana, Warners Bay, Gateshead and Charlestown areas.

Using the on demand app on a smart device, customers are able to book a service and pre-pay or pay cash to the driver for a bus to pick them up from near their home or a convenient location and take them to where they want to go within the geographically defined on demand area.

The Newcastle Transport on demand app matches customers travelling in the same direction, creating an optimised, flexible route that responds to demand and does away with timetables. This is exciting technology and provides customers with a more flexible, convenient transport solution to get them to where they want to go.

The results of the 12 month trial will be used to consider options for rolling out on demand across a larger area to improve accessibility and choice for an increased number of customers.

Customers can find out more information about Newcastle Transport on demand services at www.newcastletransport.info/on-demand or by calling 1300 590 506.

Figure 57: Passengers using Newcastle Transport bus services
Customer Outcome 2: Embracing new technology

Customer needs are met by a transport system that adapts to and embraces new technology

Technology has the real potential to change how people in Greater Newcastle travel. It is constantly evolving, presenting both opportunities and challenges in the way we plan and deliver passenger and freight transport services and infrastructure. We must take advantage of these opportunities to ensure the transport network provides the best level of service possible. The NSW Government is committed to adopting and applying new technology to transport needs in regional NSW.

Automated vehicles
Connected and Automated vehicles (CAVs) may emerge to be a low cost, convenient mode for passengers

Automated freight
Automated drones and robots may become viable alternatives for the ‘last mile’ freight task

Future bus / rail / ferry
Trunk bus, rail and road freight vehicles are likely to become increasingly automated. Many feeder bus services may be replaced by on-demand services

Alternative fuels
Electric vehicles will make up a larger share of the private and public transport fleet (private car, buses, trains and trucks)

Assisted mobility
Assisted Mobility Devices and active transport options will become more widely available

Mobility as a service
MaaS platforms, providing integrated, end-to-end trip planning and pricing for customers across multiple public and shared transport modes, will become more common

Figure 58: Technology and potential impact on the future of mobility
We will work with relevant stakeholders to use the technology available now to achieve the following outcomes within Greater Newcastle:

› Dynamic, personalised, customer-centric services, including flexible, on demand services and real time information

› A seamless service offering - the customer interface will increasingly be the MaaS provider, not the operator. Transport services/options can be bundled and sold so that greater transport choice is provided

› Smart motorways that make best use of the smart technologies being developed in vehicles, including improving productivity and safety through freight technology advances e.g. supply chain efficiencies of platooning, reducing human interaction

› Personal mobility devices (e-bikes, segways, mobility scooters) enabling people to travel further than traditional active transport (walking, cycling)

› Improved security systems to increase passenger safety during journeys and at interchanges.

Over the next 40 years, connected and autonomous vehicles (CAVs) will likely be the next major step change in transport. There is an opportunity to evaluate the role they will play in Greater Newcastle. They have the potential to reduce congestion, vehicle noise and carbon emissions and increase road safety. This has the potential to change the amenity and how places operate.
In 2016, Transport for NSW created the Smart Innovation Centre to facilitate collaboration between government, industry and the research sector to develop innovative transport technology in NSW. The Centre is already working with industry partners, HMI Technologies, NRMA, Telstra, IAG and Sydney Olympic Park Authority, to conduct the state’s first trial of the highly automated passenger shuttle at Sydney Olympic Park. The two-year trial is providing important information not only about how the technology works in the Australian environment but also how passengers respond to this type of vehicle.

Lessons learnt will help us identify and implement new, creative and better ways to deliver transport to our customers. It will also help industry develop technology, products and services that can be deployed to deliver improved mobility for customers.


Figure 59: CAV shuttle trial at Sydney Olympic Park
Adoption of new transport technologies in Greater Newcastle will support progress towards the *Greater Newcastle Metropolitan Plan 2036* outcome to improve connections to jobs, services and recreation. Greater Newcastle is a suitable location to trial automated buses, shared, connected and automated vehicles, e-bikes and mobility-service platforms. Freight and logistics areas, including the trading hubs at Beresfield-Black Hill, Newcastle port and Newcastle Airport, are also suitable as early adopters of technology-enabled solutions for faster deliveries, improved safety and increased productivity.

Close collaboration with local government will ensure that trials and the introduction of CAVs and other new transport technologies ensure safety outcomes are improved for all road users. As CAVs and rideshare services have the potential to induce a greater number of trips and variable pick up and set down points, their introduction may require modifications to local road environments and centres. Their introduction should also be aligned with efforts to curb air pollutants and greenhouse gas emissions so as not to detract from local amenity.

With the increasing availability of data, there is the potential for new data insights to support evidence-based planning. An open data policy by the NSW Government can support useful data sharing for planning purposes. Transport information that is already widely available includes access to real-time information on services, on demand services, infrastructure for personal mobility devices (e-bikes, mobility scooters), improved security systems for passenger safety and Smart motorway technology to improve safety and supply chain efficiency.

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**Smart Cities – Lake Macquarie and Newcastle**

An early adopter of Smart City ideas, Lake Macquarie City Council laid the foundation for creating a more connected, innovative and resilient city, with the adoption of the *Lake Mac Smart City, Smart Council Digital Economy Strategy* in 2016. The strategy identifies 18 initiatives that will help boost the local economy, improve Council’s performance and ultimately enhance the lifestyle of residents.

Newcastle City Council adopted its first Smart City strategy in 2017. The *Newcastle Smart City Strategy 2017 – 2021* is a collaborative strategic planning document that will guide Council and a wide range of stakeholders to develop a smarter and more innovative Newcastle and Hunter region and to maximise opportunities presented in sectors including technology, advanced manufacturing, the digital economy and the creative industries.

The *Newcastle Smart City Strategy* encompasses a range of initiatives such as the integration of technologies within residential and commercial developments that encourage take up of lower greenhouse gas emitting transport options and the regional provision of infrastructure for emerging technology, such as a regional electric vehicle charging network.
Customer Outcome 3: Movement and place framework

People and businesses experience vibrant local places balanced with efficient and effective movement of people and goods.

Roads form the majority of Greater Newcastle’s transport network. They help to move around thousands of our customers every day. They also pass through places where people work, shop and socialise.

The movement and place framework aims to balance the interests of different road users by considering and classifying roads by their function and considering the place function of the space. By doing this, different street environments emerge.

Figure 60: Street Environments, agreed between land use and road authorities, determines the desirable outcomes for all customers
The Movement and Place Framework

For example, the New England Highway supports the movement of people between Maitland and Newcastle, is home to a number of people and is the location of major destinations such as Stockland Green Hills shopping centre, Maitland Private Hospital, Maitland TAFE as well as parks and open spaces. Development of and around the New England Highway requires consideration of these multiple functions.

The classification then determines the design principles that should be implemented to support the street environments and assists in decision making for the management of road space to help create and maintain successful places.

Ultimately, decisions about the classification and treatment of roads and the implementation of the movement and place framework will have the best outcomes where there has been early and ongoing collaboration and cooperation between local and state government land use and road authorities in consultation with communities.
Potential application of framework in Greater Newcastle

In the development of Place Plans, there is an opportunity to apply the movement and place framework to support change.

The figure below is an example of how key roads in Newcastle city centre could change from movement corridors to vibrant streets or alternatively, from local streets to key movement corridors depending on their function.

The movement and place framework also recognises that transport infrastructure is not only about mobility but is a ‘place maker’. It can transform the public domain, activate centres and unlock new commercial and housing developments, renewing existing neighbourhoods and spaces. The design of interchanges and transport infrastructure can create new spaces for public art and open space and can contribute to the overall aesthetic experience of public places.

As we implement the Plan, we will collaborate with our stakeholders early in the planning and design stages of the delivery of new transport infrastructure and services to incorporate place-making initiatives that contribute to the character and liveability of places.
Customer Outcome 4: Supporting centres with appropriate transport services and infrastructure

Greater Newcastle serves a diverse range of places which requires a scalable transport network response

Greater Newcastle’s importance will significantly increase over the next four decades as a Global Gateway City. This is due to its:

› Catchment of over 1 million people

› Access to international markets through the port and airport, strong health and education precincts, world class sporting facilities and economic development opportunities such as tourism, growth of specialised manufacturing and small-medium enterprises, defence facilities and a growing knowledge industry base

› Urban renewal opportunities with transformative light rail and frequent public transport connections

› Its liveability, including opportunities for more sustainable travel behaviour.

Transport has an important part to play in supporting Greater Newcastle as a Global Gateway City to ensure its success and competitiveness into the future.

With its port, New Cruise Terminal and Airport, Greater Newcastle will increasingly become the primary city-serving regional catchments beyond the Hunter to the north, north-west and west. Investments in infrastructure such as the Hunter Expressway, Pacific Highway, New England Highway and Golden Highway will facilitate safer and more efficient connections for passenger and freight movements from Tamworth, Armidale, Dubbo, Coffs Harbour and Port Macquarie.

Improving transport connections to/from and within Greater Newcastle will be critical to realising its potential as Australia’s newest and emerging economic and lifestyle city, connected with northern NSW and acknowledged globally, as envisioned in the Greater Newcastle Metropolitan Plan 2036.
Connections within Greater Newcastle

The Hunter Regional Plan 2036 includes a vision to have 95 percent of residents living within 30 minutes of a strategic centre. The network hierarchy presented in Chapter 2 identifies the connections needed to support access between Greater Newcastle’s strategic centres. Future transport services and infrastructure will respond to this hierarchy to support access. Improvements to public transport routes and service frequencies will result in expanded public transport catchments.

Cardiff-Glendale Emerging Strategic Centre

The Hunter Regional Plan 2036 identifies Cardiff-Glendale as an emerging strategic centre and outlines an urban renewal corridor between Cardiff and Glendale.

Additionally, the Greater Newcastle Metropolitan Plan 2036 identifies the North West Lake Macquarie area as a catalyst area. Actions identified within the Greater Newcastle Metropolitan Plan 2036 for the various precincts of the North West Lake Macquarie area are to improve transport connectivity between employment and retail precincts, explore opportunities for better pedestrian and cycle connectivity to Cockle Creek station and to the Glendale Retail and Sport Precinct.

The NSW Government has allocated $1.7 million towards the development of a Strategic Business Case to identify transport initiatives which address the precincts’ future needs and complement its growth and renewal, including a potential Lake Macquarie Transport Interchange.

Transport for NSW has established a working group to support work on the Strategic Business Case in collaboration with RMS, DPE and Lake Macquarie City Council. This new collaborative approach has focussed on all stakeholders having a shared vision for the transport and land use future of this emerging strategic centre and important catalyst area.

The working group has engaged in a process to define the problem using the movement and place framework which focuses on customer outcomes. The working group have agreed in principle to a problem definition and a set of transport options to be considered in the Strategic Business Case. This includes a range of potential road, public and active transport opportunities, as well as considering the proposed Pennant Street bridge, to achieve the best outcomes.

We expect the Strategic Business Case to be finalised in mid-2018. It will recommend options to be prioritised based on the agreed objectives and value for money.
As most trips within Greater Newcastle are for discretionary purposes, such as shopping, social and recreational trips, people can often choose the time they travel. These trips also tend to be shorter in length making them suitable for walking or cycling.

Walking and cycling provides a number of benefits for both people and places. Around the world, people’s health is negatively impacted by congestion and sedentary lifestyles. Walking and cycling for short, local trips helps to prevent the onset of chronic illnesses, reduces road congestion and lowers carbon emissions and air pollutants.

Places that have corridors where walking and cycling connects people to green spaces, shops, services, schools and entertainment are also attractive places. This is important for the wellbeing of the community and to attract skilled workers that facilitate globally competitive businesses and cities.

**Newcastle ‘On Your Bike’ Campaign**

From 2016 to 2018 the NSW Government’s cycling program has provided matched funding to Newcastle City Council to deliver a campaign to get Newcastle riding more than ever. The campaign has included popular bike workshops, a website onyourbike.com.au, maps, guides, rides, social media and billboards to help Novocastrians find their path.

The campaign has sparked growth in the already large number of people who ride to get to places around Newcastle and has encouraged more people to get riding.

*Figure 63: Newcastle’s On Your Bike campaign*
The Levee

The Levee in Maitland is one of the best examples of mixed traffic shopping streets in Australia. In this environment, priority is given to people walking, with cars travelling slowly on the same cobblestone street as passing shoppers on foot.

The street has awnings and trees for shade and planter boxes, benches and bike parking to create walking thoroughfares away from the moving traffic without the need for line marking. Events and installations such as markets and opportunities for photos with Santa continue to make The Levee an exciting space.

Recent streetscape improvements to The Levee were completed at a cost of $9.92 million and funded through the NSW Government’s Restart NSW Resources for Regions program.

Figure 64: The Levee, Maitland

We are also investing in road projects to support connections within Greater Newcastle. RMS are currently developing Road Network Strategies with local councils to identify road improvements in the local government areas. We are investing in a number of roads such as the Newcastle Inner City Bypass – Rankin Park to Jesmond, Cormorant Road – Industrial Drive to Stockton Bridge and Nelson Bay Road – Fern Bay to Williamtown. We will look at travel demand management policies and tools to manage congestion and support improvements to travel time reliability.
Connections to surrounding Hunter region

The Hunter Regional Plan 2036 identified Newcastle city centre as the capital of the Hunter region. People and businesses across the Hunter rely on Greater Newcastle and the services, infrastructure and opportunities available there. Conversely, there is demand for travel from Greater Newcastle to the Hunter region. For example, over 8,000 people travel from Greater Newcastle to work locations around the Hunter (based on 2011 ABS Census Journey to Work data, see Figure 39). We need to support this relationship by providing adequate transport connections.

Figure 65: Hunter line train services, providing rail connections between Newcastle and the Hunter region
The Regional NSW Services and Infrastructure Plan identified a new way of providing transport services in regional NSW. This is a hub and spoke network model that focuses on providing connections radiating out from regional cities and centres, rather than focusing on providing connections to Sydney. The network will comprise of a range of modes to reflect the level of demand and distance travelled.

How a hub and spoke network works

Currently the network is focused on connecting regions to Sydney

A hub and spoke network also provides connections between regional cities and centres

Figure 66: Moving from a Sydney-focused network to a focus on connecting people to regional cities, including Greater Newcastle

The Regional NSW Services and Infrastructure Plan also includes a number of initiatives for investigation to support access to Greater Newcastle from around the Hunter region. These include road improvements to the New England Highway and the Golden Highway as well as investigating a Dubbo to Newcastle rail connection.
Connections to Greater Sydney

A key part of a successful Global Gateway City is its connections to other major cities. The demand for travel between Sydney and Greater Newcastle will continue to grow. This is shown in Figure 20 and Figure 25. With recent significant investment in road infrastructure on these corridors, alternate public transport links such as rail 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) is not deemed to be feasible in the Regional NSW Services and Infrastructure Plan for implementation until the 20+ year timeframe.

Whilst the operation of emerging technologies are likely to be some way off, opportunities for faster and higher speed rail will be considered as part of investigations within the 0-10 year timeframe, and more detailed investigations into corridor preservation based upon the most constrained design criteria (HSR) should be investigated within the 10-20 year timeframe.

In the next decade it is recommended that Faster Rail corridor infrastructure investment programs be focused on Satellite and Global Gateway Cities to achieve significant travel time savings.

For the Global Gateway City of Greater Newcastle, the travel time aspiration is two hours to Sydney. The Australian Government has recently announced that it will provide matching funding for the development of a strategic business case for Faster Rail in the Sydney to Newcastle corridor. These investments 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) and deliver benefits to both passenger and freight flows.

Faster rail improvements as well as the New Intercity Fleet will also mean better connections between the Central Coast and Greater Newcastle.

Access to the trade gateways of Newcastle port from inland NSW will continue to be important for the next 40 years with the movement of coal dominating the rail transport task.
Improving towards a higher speed service

Emerging technologies are driving infrastructure improvements and initiatives, towards higher speed services connecting regional cities and centres to Sydney.

Suburban and Intercity timetable and infrastructure improvements
Implementation – 0 to 10 Years (2016 - 2026)

Corridor infrastructure investment programs
Implementation – 10 to 20 Years (2026 - 2036)

Visionary initiatives (higher speed connections)

High Speed Rail
New dedicated corridor
Implementation – 20+ Years (2036)

Emerging Technologies
Implementation – TBC

Suburban Intercity Regional Freight
Toward 100km/h

Intercity Regional Freight
Toward 160km/h

Figure 67: Options for connecting Global Gateway Cities to Sydney
Connections to surrounding regions

Greater Newcastle’s role as a Global Gateway City is reflective of the relationship that currently exists and will continue to exist between Greater Newcastle and surrounding regions.

The patronage data for NSW TrainLink rail services discussed in Chapter 1: Introduction shows the strong existing public transport connection that Greater Newcastle has with the North Coast and New England North West regions. However, this data only reflects the existing public transport network. Improvements to data collection across regional NSW, proposed as part of the Regional NSW Services and Infrastructure Plan, will enable a greater understanding of where people travel will support the implementation of the hub and spoke model to provide better transport connections across regional NSW.

We are also investing in a new regional rail fleet to deliver better levels of comfort and service for regional rail customers. Improvements to the regional rail fleet will benefit people travelling to and from Greater Newcastle. There are opportunities to consider new servicing patterns for regional cities and centres to support day return travel and increased accessibility for customers across regional NSW.

Improvements to transport within Greater Newcastle will ensure people travelling from outside the region will be able to connect to the places they need to go easily and efficiently.

Additionally, we are working on rolling out integrated ticketing across regional NSW. This will mean people travelling into Greater Newcastle from outside the area will not have to purchase different tickets.

The growth of Newcastle Airport, supported by funding from the Regional Airports Program, and investigation into higher speed connections will mean faster journeys for people travelling long distances.
New Regional Rail Fleet

The entire regional rail fleet will be replaced to deliver unprecedented levels of comfort and service for regional rail customers. This includes 60 XPT passenger cars (plus 19 diesel locomotives), 23 XPLORER and 28 Endeavour passenger cars for services between Sydney, Canberra, Melbourne, Brisbane and major NSW regional centres.

An Expression of Interest was issued in August 2017 for the design, construction and maintenance of the new trains and a new maintenance facility at the preferred site in Dubbo (subject to planning approval). In December 2017 a Request for Proposal was issued to three proponents, and is due to close June 2018. A detailed review of proposals will follow before the contract is awarded. The new trains will come into service progressively, with the first trains anticipated to be delivered in the early 2020s.

Dubbo has been identified as the preferred location for the brand new regional maintenance facility, subject to planning approval.

The key benefits from the introduction of the new Regional Rail Fleet are:

- Safe, reliable, comfortable and accessible regional trains
- Ability to leverage innovative technologies for customers and fleet operations
- A more reliable service for customers travelling long distances
- Opportunities for new servicing patterns for regional cities and centres, including day return travel to support the hub and spoke model
- Stimulation of the regional economy and provision of long term, sustainable jobs including traineeships and apprenticeships with the maintenance of these new trains in regional NSW.
Trials of day-return public transport options between regional hubs

NSW TrainLink has recently commenced trials of new coach connections to better connect regional communities and provide day return services:

- Tamworth to Newcastle
- Tamworth to Dubbo
- Tamworth to Port Macquarie

Before these trials there were no direct services between Tamworth and Dubbo and between Tamworth and Port Macquarie. The services from Tamworth to Newcastle did not provide a day return option.

Each trial aims to provide easy connections between regional hubs for better access to medical and health providers, business, shopping, recreational activities or to catch up with family and friends.


Figure 68: Dubbo Coach Interchange, providing connections across regional NSW
Customer Outcome 5: Responding to changes in land use, population and demand

Changes in land use, population and demand, including seasonal changes, are served by the transport system.

Over the next 40 years, forecasts show that Greater Newcastle’s population will primarily increase in greenfield development sites along the New England Highway corridor as well as in areas like Morisset-Cooranbong, Nelson Bay Peninsula, Raymond Terrace and Williamtown-Medowie-Karuah. Population within the Newcastle city centre will also increase.

Areas within 10km of the Newcastle city centre will increasingly densify. The urban renewal of the Newcastle city centre, including the University of Newcastle NewSpace campus and other corridors will generate additional demand.

We need to provide a transport network that supports these changing land uses, matching services, span of hours and frequencies to demand. Public and active transport infrastructure and service changes should be put in place before people move into new developments to support sustainable travel behaviour and provide viable transport choices.

We also need to support other activities that generate increased travel demand and changed travel patterns.

These include:

- Growth and change in freight and logistics operations, emergence of new industries and businesses and investment in major infrastructure. Examples of economic and infrastructure changes include the redevelopment of former industrial sites for newly emerging services and creative industries as well as housing.

- Recreational events such as sporting matches, festivals and concerts that generate travel from within and outside Greater Newcastle. The Hunter Sports and Entertainment Precinct redevelopment will continue to see increased demand for travel. This could mean the introduction of special event services, park and ride options or integrated public transport ticketing for events.

- Tourism demand across Greater Newcastle, including the New Cruise Terminal.
Special event services

Across Greater Newcastle special event transport services are available to support increasing demand for travel to events.

Since November 2017 Newcastle City Council, in collaboration with McDonald Jones Stadium, have implemented a weekday park and ride service between Broadmeadow and the Newcastle city centre. To support increased demand for travel into the city centre for New Year’s Eve celebrations, the park and ride service was provided free on December 31, 2017. Likewise, free services were provided to support people travelling to the Nobby's Beach dawn service on Anzac Day in 2018.

To enable over 30,000 people to travel to and from the recent Hyundai A-League Grand Final at McDonald Jones Stadium, extra public transport services were implemented across Greater Newcastle. Extra train, ferry and bus services as well as park and ride services from Newcastle city centre, Wallsend and Kotara and shuttles from Newcastle Airport and Newcastle Interchange were implemented. These services could be further enhanced with the introduction of integrated public transport ticketing for major events.

Private operators also provide shuttle services to connect people across Greater Newcastle, including visitors staying in the Hunter Valley, and to special events such as festivals and concerts. They also provide tourist services to the vineyards and wineries.

Figure 69: Hunter Valley vineyards

Adopting an agile planning approach

If transport services and infrastructure are to be truly responsive to changing land use population and travel demand, the approach to planning transport has to be equally responsive to uncertainty and change. Adopting an agile approach to planning can help prepare for growth and change by identifying the needs or performance ‘triggers’ for deploying service changes in the short term and major infrastructure construction and repurposing in the longer term. Using an agile approach also means involving customers, stakeholders and communities in the development of a range of options and design for service and infrastructure investments.
Revitalising Newcastle

The NSW Government is investing more than $650 million in the Revitalising Newcastle program to transform the city centre by strengthening connections between the city and waterfront, creating job opportunities, providing new housing and delivering attractive public spaces connected to better transport.

The investment responds to the transition of the former heavy rail ‘movement corridor’ to an urban environment with a high ‘place’ value. An example is the transition of the former rail corridor at the Entertainment Precinct by Queens Wharf to a vibrant street.

The Revitalising Newcastle program includes:

› the completed Newcastle Interchange, a new multi-modal transport interchange at Wickham in the city’s west
› wire-free light rail between Newcastle Interchange and Pacific Park, just 200 metres from Newcastle Beach, reinvigorating Hunter and Scott Streets
› revitalised land to provide education and affordable housing, mixed use development, job opportunities, tourist attractions and public open space, including the Market Street Lawn.

Revitalising Newcastle is a key multi-agency initiative coordinated by the Hunter Development Corporation. We are working closely with the Hunter Development Corporation on delivering the objectives of Revitalising Newcastle:

› Bring people back to the city centre
› Connect the city to its waterfront
› Preserve and enhance the unique heritage
› Help grow new jobs in the city centre
› Create great places linked to new transport
› Create economically sustainable public domain and community assets.

Figure 70: Supporting the return of people back to the Newcastle city centre
Customer Outcome 6: Economic development is enabled by regional transport services and infrastructure

Regional businesses and tourism are enabled by appropriate, coordinated, efficient and effective transport services and infrastructure

The transport system powers NSW’s future $1.3 trillion economy and enables economic activity across the state. The Hunter region, including Greater Newcastle, is critically important to the state’s economic growth. The largest freight volumes in NSW move through the Hunter region, accounting for one third of the NSW freight task. Every year nearly 200 million tonnes of coal are moved through the region to local power stations and global steel and energy markets.

Although the mining industry dominates in volume, agricultural production is one of the Hunter’s greatest strengths and the region’s agriculture is its highest value commodity. The region produces world famous wines and fresh produce that is enjoyed throughout the state and internationally. Beef, poultry, eggs, horses, fruit, vegetables and fishery produce are moved through the region every day by truck and air. An efficient road and rail network that connects regional NSW to Newcastle Airport and port and between Newcastle and other major cities will provide opportunities to facilitate this growth.
The NSW Government recognises that airports are catalysts for economic growth. Infrastructure NSW has noted that it is important that sufficient aviation capacity is available for the projected 10 million annual international tourists who will come to New South Wales by 2036.

The NSW Government has previously allocated $11.1 million for the expansion of Newcastle Airport, as part of the $450 million the Hunter Infrastructure and Investment Fund established in 2011. Stage One of the project included a new arrivals hall and quarantine and customs areas. These works were completed in 2015. Stage Two of the project is a full refurbishment of the existing terminal to cater for check-in and an expansive departure lounge.

Newcastle Airport terminal expansion has helped position Greater Newcastle as a Global Gateway City. Passenger movement through the Airport has grown by 25% in the past 10 years and is forecast to double in the next 20 years up to 2.65 million passengers annually. In addition to growing domestic visitation, Newcastle Airport could receive international flights.

With more than 1.25 million passengers passing through the airport in the 2016/17 financial year, it has been estimated that Newcastle Airport contributes over $1 billion in economic impact to the state’s economy.

The economic benefits of an airport extend beyond the passenger and freight facilities. Newcastle Airport has released a Masterplan that sets out a vision to take advantage of the unique commercial development opportunities on level land surrounding the airport. The airport already has shared airside facilities with the RAAF Base, Williamtown and other organisations that hold long-term leases including BAE Systems and Jetstar Engineering.

Improving the quality of transport infrastructure and planning will provide people with greater ease of access to the airport and remove barriers to visitation, trade and investment. This in turn will assist in growing the positive impact created by Newcastle Airport and its regional airports.
Newcastle Airport Vision 2036 – Delivering the airport the region deserves

Newcastle Airport released a visionary plan in March 2018 to expand the Airport to meet the needs of the local community.

The Master Plan describes the airfield, terminal, landside, ground transport and aviation support facilities needed to cater for increased numbers, including:

- terminal transformation with facilities expanded over two levels
- additional food, beverage and retail businesses
- international services implemented into the facilities
- aero-bridges from the upper level
- major modifications to integrate ground transport and road access
- creation of a pedestrian plaza
- additional car parking areas and offerings
- creation of a ‘campus’ style business precinct.

Supported by the NSW Government and developed in consultation with local, state and federal government stakeholders and the community, the Master Plan provides a clear direction and capitalises on the role of the Airport in stimulating economic and social prosperity.

Intended to guide the ongoing development of New South Wales’ second busiest airport, the Master Plan supports continued investment in vital infrastructure that provides capacity to support strong regional, national and global connectivity, benefiting both the NSW visitor and knowledge economies.

Figure 71: Newcastle Airport, arrivals
Freight

A snapshot of the importance of the Hunter region to the NSW economy shows that in 2016 the region produced and moved:

- 62% of the NSW volumes of coal
- 100% of NSW alumina and aluminium
- 34% of NSW fuel
- 15% of NSW building and construction materials
- 14% of NSW manufactured goods
- 13% of NSW oilseeds
- 12% of NSW milk and dairy products

Figure 72: Hunter’s contribution to NSW’s exports
In addition, in 2016 the Newcastle port imported 21% of NSW’s fuel supply.

The total volume of freight transported into and out of the Hunter region was 176 million tonnes in 2016. This is forecast to grow by around 18% to over 200 million tonnes by 2036.

The Hunter region has the highest rail mode share for freight in NSW. The transport network carries 150 million tonnes per annum by rail and over 20 million tonnes by road. Rail freight movements are mainly used to transport coal. Almost all, 99 percent, of coal freight movements are by rail. In contrast, most other freight movements are by road.

Greater Newcastle is well connected to the state-wide network of road and rail. However, almost all freight needs to either cross the Hunter River or travel through the metro core to reach the port.

Regardless of the global future of coal, the Hunter region will continue to be an important part of NSW’s future freight task. Access to the trade gateways of Newcastle port and airport from inland NSW will continue to be important for the next 40 years and managing the transportation of increased volumes of freight through a densifying metro core will be a major challenge for the transport system.

Better separation of freight and passenger movements is a key focus in Future Transport 2056 as it provides benefits to both customers. An example is the committed initiative for the Lower Hunter Freight Corridor Protection.

With technological advancements, ‘first and last mile’ freight movements will likely be transformed by technology and deliver efficiencies in logistics and small parcel movements, incorporate innovative direct-to-consumer deliveries and support ‘freight as a service’ models. Advances in technology relating to drones and 3D printing also have the potential to impact supply chains and freight movements.

**Air freight potential**

When we were undertaking consultation as part of Future Transport 2056, we heard strong feedback from regional communities, Councils and industry about the role of aviation in the freight task.

The privately financed Toowoomba Wellcamp Airport was frequently referenced as an example of an airport that has responded to the demand for freight to be transported by air. It is now a major hub for the export of perishable agricultural goods direct to Asia.

Greater Newcastle’s location within the Hunter Valley and its close proximity to major agricultural producers in the North Coast, New England North West and Central West and Orana regions presents an opportunity to capture access to growing markets in Asia and around the world.
Tourism

Greater Newcastle and the surrounding Hunter region is home to nationally and internationally significant tourism destinations and events. Visitors, residents and students are attracted to Greater Newcastle’s amenity, heritage, natural environment, especially its surf beaches, unique waterways, national parks and wetlands. Its diverse range of sporting and cultural events, such as Surfest and Ben Ean Cessnock STOMP Festival, and its cluster of vineyards and wineries add to Greater Newcastle’s tourism appeal and make it an important contributor to the state’s growing visitor economy.

The Hunter received over 3.6 million domestic overnight visitors in 2017, up by 8.7% on the previous year. This number represents a 16.3% share of all domestic visitors to regional NSW. The Hunter also received 194,300 international overnight visitors in 2017, an increase by 13.8% and representing around one in five international visitors to regional NSW.

Figure 73: Visitors to the Hunter region
Newcastle port, already upgraded to host larger ships carrying up to 3,900 passengers, is now well underway to position Newcastle as an international cruise destination. The direct expenditure of passengers and crew makes a significant contribution to the local economy. In 2015/16, 10 cruise ships visited Newcastle meaning Greater Newcastle hosted over 14,000 passengers and 3,500 crew members who spent more than $4.5 million in the local area. The number of ships scheduled to visit will almost double to 18 ships in 2017/18.

Seamlessly connecting cruise passengers and other domestic and international visitors from their point of arrival to their desired local and regional destinations within Greater Newcastle and beyond will support the local and regional economy and help continue to grow visitor numbers.

Newcastle Cruise Terminal and the visitor economy

Newcastle port is upgrading its infrastructure to support the growth of cruise shipping for Greater Newcastle and the Hunter region. The NSW Government has committed $12.7 million to develop a New Cruise Terminal to provide home port facilities, including a new cruise terminal building, a dedicated car park, improved accessibility and wharf in-fill enhancements.

The terminal at the Channel Berth, within the port’s Carrington Precinct, can handle vessels up to 320 metres in length, such as the 317 metre long Celebrity Solstice, the largest ship to visit the port. More than 30 coaches can park at Channel Berth, enabling passengers to quickly transit from the ship to attractions across the Hunter region.

Funding provided by the NSW Government’s Restart NSW Hunter Infrastructure Investment Fund will greatly enhance the cruise passenger experience in Greater Newcastle. The cruise terminal development will be a key part of Newcastle’s revitalisation and is estimated to add around $26.7 million to the local economy.

The construction of the cruise terminal will take place in 2018 and Newcastle port will continue to welcome cruise ships and their passengers as the works take place.

Figure 74: Newcastle cruise ship visit
Customer Outcome 7: Safety and Performance

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

Safety and performance are interlinked. As we expand and improve the transport networks to meet increased movement of vehicles, people and goods, safety remains our foremost concern. 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 the safety of our roads by designing standards so all new roads are designed to a standard of 4 or 5 star

› Prioritising separation of different transport users to improve safety, freight efficiency and promotion of active travel

› Ensuring safety features are better matched to road function and account for the different road users in each environment

› Encouraging faster adoption of critical safety technologies, and the uptake of new vehicle technologies that provide safer end to end journeys.

Despite a long term decline in road fatalities, there has been a recent increase in fatalities since 2014 across NSW. In 2017, 392 people lost their lives on our roads, almost 70 percent of these fatalities occurred on country roads. Reducing road trauma is a State Priority.

More than two-thirds of NSW road fatalities occur on country roads. Greater Newcastle, like other regional NSW areas, is over-represented in fatal road crash statistics compared to its population. In 2016 there were 34 fatalities in the Greater Newcastle region, accounting for nine percent of the total State road toll. Greater Newcastle represents 7.5 percent of the State’s population.
34 fatalities

9% of the total State road toll

7.5% of people in NSW live in Greater Newcastle

Figure 75: Greater Newcastle 2016 road toll
With the release of the *Road Safety Plan 2021* in February 2018, the NSW Government has set an ambitious target to reduce road fatalities by at least 30 per cent on 2008-2010 levels by 2021 with a long term vision of working towards zero trauma on the transport network.

The *Road Safety Plan 2021* features targeted and proven initiatives that will help us progress towards our transport safety goals, addressing key trends, trauma risks and the types of crashes occurring on NSW roads. Over the next five years, the NSW Government will deliver key actions in the Plan, including:

- A new Saving Lives on Country Roads program to deliver safety infrastructure upgrades on high risk curves and key routes on regional NSW roads
- Tackle drink and drug driving behaviour by strengthening penalties and enhancing enforcement, including swift, strong and certain penalties for lower range drink driving and drug presence first offenders
- Develop a new NSW Police enforcement strategy for regional and metropolitan NSW to target high risk behaviour
- Increase safety for vulnerable road users by providing pedestrian crossings, refuges and traffic calming devices, as well as expanding 40km/h zones in high pedestrian and local areas
- Work with the heavy vehicle industry to develop a new heavy vehicle strategy to improve operational safety and increase the uptake of safety technology.

The NSW Government will continue to deliver the Safer Roads Program, which is a state-wide program that delivers targeted safety infrastructure projects to address a variety of road safety issues, such as intersections, fatigue and run off road crashes. The 2017–2018 program will see 200 projects funded, of which almost 70 percent are in regional areas.
Maritime Safety Plan 2017-21

In a region characterised by extensive and scenic waterways, lakes, rivers and coastline, many of our customers in Greater Newcastle who take to the water for commercial or recreational boating will benefit from the initiatives and continued support for maritime safety set out in the NSW Maritime Safety Plan 2017-2021.

The Plan released in January 2018 adopts the internationally recognised Safe System Approach consistent with the Road Safety Plan 2021. This approach recognises that people are the most important element of the system. The Plan sets out initiatives to encourage safe behaviour, safe vessels and safe waterways.

The Plan sets the same ambitious target of reducing the rate of fatalities and serious injuries on NSW waterways by 30 percent by the end of 2021. Our longer term vision is to achieve zero fatalities and serious injuries by 2056.

Over the past five years, the NSW Government has invested more than $500 million in delivering services and infrastructure to the NSW maritime community. Boat registrations, driver licence and mooring fees along with maritime property revenue are paid into the Waterways Fund, established to provide funding for the initiatives contained in the Maritime Safety Plan 2021.

A new Maritime Investment Strategy is being developed on how the Waterways Fund will support evidence-based initiatives in this plan.

Figure 76: Recreational boating on Lake Macquarie

Transport for NSW will also continue to investigate the continued application of technology to improve safety on our transport network. As part of the Road Safety Plan 2021, we will increase the uptake of safer new and used vehicle, and will enhance the NSW Government vehicle fleet policy with lifesaving technologies, including autonomous emergency braking and other driver assist technologies. Initiatives such as Smart motorways and trialling new in-vehicle technologies, like Cooperative Intelligent Transport Systems, hold great potential for reducing road trauma in regions like Greater Newcastle where motorways support high volumes of heavy vehicles.
The Cooperative Intelligent Transport Initiative

Cooperative Intelligent Transport Systems (C-ITS) allow vehicles to communicate with other vehicles and infrastructure, such as traffic signals, that are fitted with the same system. Drivers then receive alerts about upcoming hazards and traffic signal information. The technology is sometimes referred to as ‘connected vehicles’.

The Centre for Road Safety has established Australia’s first C-ITS testing facility, known as the Cooperative Intelligent Transport Initiative (CITI). Based in the Illawarra region of NSW, the trial has fitted C-ITS technology to up to 60 trucks; 11 public buses; 2 light vehicles and 1 motorcycle. The trial includes 3 signalised intersections, broadcasting signal phase information to C-ITS equipped vehicles; 1 portable roadside unit broadcasting speed limit information to C-ITS equipped vehicles and 3 portable roadside units receiving and collecting data from C-ITS equipped vehicles.

These devices allow drivers in participating vehicles to see the following messages:

› Intersection collision warning
› Harsh braking ahead warning
› Red light alert when light is red or amber
› Speed limit information.

More than 1 billion records have been collected from the trial for analysis.

CITI is being expanded to include 50 light passenger vehicles. The study will investigate the potential safety benefits and user friendliness of the system.


Figure 77: An example of connected freight vehicles
Customer Outcome 8: Network Resilience

A transport system that is resilient to significant weather events, including floods, fog and bush fires

Severe climate, weather and catastrophic events, such as extreme heat, bushfire, storms or flooding, pose a significant risk to human safety and cause major disruption to transport networks. Greater Newcastle has experienced several severe events in the past, including major flooding in 2017 and 2015, which caused damage and disruption to its transport connections. It is critical that transport infrastructure systems and services are able to withstand such extreme climate, weather and catastrophic events.

The Greater Newcastle Metropolitan Plan 2036 requires state and local government to plan for a changing climate by ensuring that development responds to existing and changing natural hazard risks. Transport for NSW has identified a number of initiatives in the Regional NSW Services and Infrastructure Plan that will be part of building a resilient network in Greater Newcastle, including:

› Resilience Package – improving immunity for flood prone regional roads
› Slopes and culverts condition program – to progressively address and improve the conditions of slopes and culverts in the network
› Investigating implementation of traffic incident and information services for management of all road closures (i.e. floods and natural disasters)
› Road improvements which will include flood immunity works such as the Pacific Highway between Belmont and Swansea.

In addition to investments for infrastructure upgrades we need to consider how the transport system can assist emergency management, evacuation and relief in the event of significant weather events in line with the NSW Office of Emergency Management discussion paper on NSW Critical Infrastructure Resilience Strategy.
Customer Outcome 9: Accessibility to employment and services

Accessibility to employment and services such as health, education, retail and cultural activities within regional cities and centres

The NSW Government recognises the importance of delivering high quality transport services to all customers. A set of three supporting plans for Future Transport 2056 will provide details about how we are improving the accessibility of transport services, infrastructure and products.

- The first of these to be released is the Disability Inclusion Action Plan 2018 to 2022 which explains the achievements and forward actions that are improving access to transport services for people living with disability.

- The ways in which our transport services will be tailored to better suit the needs of our older customers so they can maintain active and independent lives will be explained in an Older Persons Transport and Mobility Plan. This plan will set out actions that Transport for NSW will undertake to contribute to the state-wide goals of the NSW Ageing Strategy.

- A Social Access Plan will explain ways to increase equitable transport access and reduce transport disadvantage, especially for Aboriginal communities. It has been developed with extensive community consultation throughout NSW and will provide guiding principles aimed at successfully connecting people to opportunities that promote social inclusion.

The continued expansion of the passenger network and services in Greater Newcastle will enable more people to access employment, services and cultural and recreational activities. New timetabling for Newcastle Transport came into effect in January 2018 that increased the frequency of bus and ferry services. Monitoring the success of these changes will inform future improvements to frequency and optimise bus routes along key corridors.

The procurement of the New Intercity Fleet will provide accessible rail carriages and the progressive rollout of the Transport Access Program will fund upgrading of rail stations along the rail corridors over the next ten years.

The Transport Access Program has enabled the upgrading of Newcastle’s wharves for people using essential mobility aids. Wheelchair accessible wharves have level or ramped access that allows independent access by a person using a manual wheelchair or walking aid. They are also accessible via electric wheelchairs or scooters when travelling with the help of a friend or carer.
New Intercity Fleet (NIF)

A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast is on the way. The first of the double deck trains consisting of 500 new train carriages will be delivered in 2019 and the rest of the fleet will progressively follow. The new fleet will be serviced and maintained at a new purpose-built train maintenance facility being built at Kangy Angy on the Central Coast.

Some existing rail infrastructure also needs to be upgraded on the intercity network to accommodate the introduction of the NIF. This includes:

- Platform extensions
- Installation of CCTV, PA, lighting and station furniture, where required
- Modifications to station platform edges
- Modifications to infrastructure within the rail corridor, including the installation and relocation of signalling and overhead wiring structures
- Re-positioning of rail tracks along parts of the rail corridor
- The key benefits for customers from the introduction of the NIF are:

  - Wider, more spacious seats with arm rests
  - Battery charging facilities for mobile devices
  - Two by two seating for extra room and comfort
  - Dedicated spaces for luggage, prams, bicycles and wheelchairs
  - Improved accessibility including accessible toilets
  - Tray tables with cup holders
  - Improved customer information through digital information screens and announcements, CCTV and help points, and modern air conditioning.

Figure 79: Artist impression of the NIF
The Country Passenger Transport Infrastructure Program Grants Scheme (CPTIGs) continues to fund regional local councils to deliver upgrades to bus stops to make them compliant with disability standards.

By 2056 improvements to the accessibility of the passenger transport network in NSW will aim to provide barrier free travel for everyone, regardless of age, ability or personal circumstances. This includes making trains, buses and ferries accessible for people who use mobility aids including wheelchairs, scooters, walking frames, prams and strollers, allowing them to safely board and travel on most buses, ferries and trains.

Providing subsidies for the construction or upgrade of bus stops in regional NSW

The CPTIGS provides subsidies to support the construction or upgrade of bus stop infrastructure generally owned and maintained by local councils across regional NSW. The Scheme aims to maximise benefits to country passengers through supporting:

› More accessible passenger transport, including better connections between bus stops and surrounding communities

› An increase in the use of passenger transport in country areas through improved awareness of bus stop locations, kerbside information and improved security

› The development of minor infrastructure to complement passenger service development

Funding is allocated regionally to facilitate an equitable distribution of the grant support and projects. The funding is especially important in areas where there are higher proportions of older people and people with disability to help them use local public transport services.

Under the 2015/17 program the following grants have been approved:

› Cessnock City Council – $100,000 to upgrade 15 bus shelters and construct seven new shelters.

› Port Stephens Council – $130,300 to upgrade 73 shelters and construct 3 new shelters.

› Maitland City Council – $144,000 to upgrade 57 shelters and construct 3 new shelters to comply with disability standards under the Disability Discrimination Act 1993.

Customer Outcome 10: Improved connectivity, integrated services and better use of capacity

Customers will enjoy improved efficiency and reliability from their network

Investments in the future transport network to meet the growing demand for the movement of goods and people will require a large financial outlay from a constrained government budget. It is important that new build and upgrades to the network deliver improved connectivity in an integrated system that makes the best use of the existing capacity to ensure that all funds are spent in the most efficient and effective manner.

Fernleigh Track

An example of making better use of existing assets is the Fernleigh Track.

The Fernleigh Track is Greater Newcastle’s busiest cycleway with 123 commuting riders counted on the Super Tuesday count in March 2016 (between 7am-8:45am).

The 15 kilometre multi-use track follows a former private railway line which runs between Belmont and Adamstown. Like much of the network it was developed in stages over the course of a decade (the first section between Adamstown and Burwood Road opened in 2003).

As well as being a commuter route, the Fernleigh Track has become a popular visitor destination that takes cyclists though local bushland and the beachside community of Redhead.

Figure 80: Bicycle parking
Priority corridors

In 2019 Newcastle Light Rail will commence operation, providing a new way of moving through the Newcastle city centre. To support this investment, we need efficient transport connections that enable people to access the Newcastle Light Rail network and city centre.

Seventeen potential priority corridors have been investigated across Greater Newcastle and its strategic centres for investment in priority public transport over the next 10 years. Corridors investigated included connections to Newcastle Airport, University of Newcastle, John Hunter Hospital, Broadmeadow as well as other key destinations. All corridors have been investigated due to their anticipated patronage growth and development, travel trends and opportunities to build upon the existing public transport network. They have been considered in relation to the urban renewal corridors identified in the Greater Newcastle Metropolitan Plan 2036 as well as Newcastle Transport’s frequent network implemented in January 2018.

Figure 81: Priority corridors and urban renewal corridors
Four priority corridors have been shortlisted for further exploration:

- Newcastle Interchange – John Hunter Hospital
- Newcastle Interchange – Wallsend
- Newcastle Interchange – Mayfield
- Newcastle Interchange – Charlestown

As part of identifying priority corridors, an analysis was undertaken in relation to the performance of the corridors, identification of bus priority measures to improve performance and a review of light rail constraints.

Introducing bus priority measures in tactical locations can increase journey speed and reliability in the short and medium term delivering more rapid services with potential for light rail in the long term depending on demand. For customers, this will result in improved connectivity between Greater Newcastle’s centres and increased accessibility to opportunities like jobs, health care, education and sports facilities.

This work will provide the foundation for the development of a rapid bus program for Greater Newcastle.

Parking

A strategic approach to the provision of car parking needs to be considered for Greater Newcastle. This includes consideration of parking in centres as well as opportunities for park and ride and car pooling.

Informal car pooling and park and ride currently occurs along key corridors such as Hunter Expressway, Newcastle Link Road and Pacific Highway. We need to develop a plan on how to better manage these opportunities in consideration of the broader transport network, including connecting public transport corridors.

Other opportunities available for consideration include:

- Using technology to better manage car parking through improved communication and wayfinding, parking enforcement compliance and pricing based on demand
- Development controls setting maximum parking space requirements in new developments
- Shared use of car parking spaces e.g. with businesses that only require car parking at certain periods. The use of McDonald Jones Stadium parking by Newcastle City Council’s park and ride service is an example of this currently occurring in Greater Newcastle

A consistent approach to managing parking needs to be achieved across a region; it cannot be undertaken in one area and not others. We will work on delivering parking guidelines for Greater Newcastle to provide direction to local decision makers and developers.
Parking in strategic centres

Previous parking policies have focused on providing parking to meet the demand in centres. However, ease of parking results in traffic congestion, decreases the viability of public transport and detracts from the amenity of places as they focus on vehicle access and not access for people.

These policy positions should be considered:

› Parking should support customer and business service needs

› Sustainability should drive parking supply, not demand, recognising:
  • The need for parking turnover
  • Reallocation of all day parking away from centres that are supported by strong public transport networks

› Maximising value in parking spaces particularly in centres through:
  • Prioritisation of short stay, high turn-over spaces over long stay, low turn-over spaces
  • On street parking for short stay uses only
  • Reduction in time limits for on-street parking

› Parking to support transport objectives through:
  • Progressive reduction of relative parking supply or pricing as a travel demand management tool to encourage mode shift to public and active transport.
Commuter car parking

Commuter car parks (CCPs) are an important component of an integrated transport network with both strategic and customer benefits. We are investigating the role that CCPs have in NSW’s public transport network to develop overarching guiding principles for locating and prioritising CCPs. The guiding principles will help to inform the analysis, evaluation, and prioritisation of new or expanded commuter car park locations. While these guiding principles are in development, they may consider:

- How CCPs may provide access to rail and high capacity bus interchanges for populations not well served by public transport
- Frequency and type of available public transport
- Strategic importance of the location and ensuring land use supports place-making and economic outcomes
- Future land use changes and urban renewal
- Existing parking capacity (on and off street)
- Patronage
- Operational interventions and service alternatives to better utilise existing CCP facilities.

This prioritisation and development process helps to ensure that planning for new or expanded commuter car parking favours locations that would derive the most benefit and where additional parking would most effectively address customer needs.

Figure 82: Commuter car parking at Morisset and Maitland Stations
Service and infrastructure initiatives for Greater Newcastle
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 2056, including policy, service and 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. The initiatives align with the NSW State Infrastructure Strategy 2018-2038. 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.
Regional NSW policy, planning, service and infrastructure initiatives

Committed initiatives 0–10 year timeframe

Initiatives for investigation 0–10 year timeframe 10–20 year timeframe

Visionary initiatives 20+ year timeframe

- Improving the attractiveness of centres and communities
- Improving inter-region and regional city connectivity
- Expanding the regional public transport network
- Harnessing future forms of mobility
- Optimising existing infrastructure capacity
- Smart maintenance of our assets to optimise performance and reliability
- Investing in new capacity, the right mode for the right journey

Typical implementation lead time for new initiatives (years)

POLICY AND PLANNING
Can be developed and adopted in a short time frame, is flexible and easily changed based on customer needs.

SERVICE
Allows for innovation, can quickly respond to changing customer needs, and be implemented and improved with low capital investment.

INFRASTRUCTURE
Has lengthy development and planning process, takes longer to implement and requires significant capital investment.

Figure 83: 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.

Our investment approach is designed to be flexible, responding to change and uncertainty. The 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 will be undertaken within the next 10 years to ensure any major impacts in growth patterns or use are considered.

Categorisation of initiatives

- **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.

- **Initiatives for investigation (0–10, 10–20yrs)**
  Initiatives 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 20 years.

- **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.
Greater Newcastle initiatives

Figure 84: Greater Newcastle initiatives

All initiatives for investigation are subject to business case development. In addition to these specific initiatives for Greater Newcastle, statewide initiatives have been identified and are included in Chapter 4 of the Greater Newcastle Future Transport Plan.
Greater Newcastle initiatives

Key

- $ Commitment 0–10 years
- $ Initiation for investigation 0–10 years
- $ Initiation for investigation 10–20 years
- $ Visionary initiative 20+ years

Initiatives

1. New Intercity Fleet
2. Nelson Bay Road improvements – Fern Bay to Williamtown
3. Newcastle Cruise Terminal
4. Cormorant Road, Industrial Drive to Stockton Bridge
5. Hunter Pinch Points
6. Newcastle Inner City Bypass, Rankin Park to Jesmond
7. M1, Hexham, Raymond Terrace upgrades
8. Newcastle Light Rail
9. Lower Hunter Freight Corridor Protection
10. Road Network Strategies
11. Freight corridor protection
12. Newcastle Light Rail network extension
13. Greater Newcastle Rapid Bus Package
14. Bus headstart for Greater Newcastle
15. Greater Newcastle Place Plans
16. Improvements to Newcastle port
17. Nelson Bay Road improvements – Williamtown to Bobs Farm
18. Sydney-Central Coast-Newcastle Faster Rail improvement
19. Great Dividing Range long term solution study
20. Great Dividing Range long term solution corridor preservation

21. Travel demand management policies and tools
22. Cycling improvements
23. Parking guidelines
24. Last mile freight delivery
25. Technology-enhanced Mobility Implementation Strategy
26. On demand services
27. M1 – Newcastle SMART Motorway
28. Corridor Preservation for Higher Speed Connections
29. Newcastle Ferry Network extension
30. Lower Hunter Freight Corridor
31. Tomago Road improvements – Pacific Highway to Williamtown
32. Outer Metro Roads Program
33. Dubbo to Newcastle rail connection
34. New suburban type rail service for Greater Newcastle
35. Electrification of the Hunter Line to Telarah
36. New rail alignment of North Coast Line between Newcastle and Stroud Road – investigation corridor
37. Cessnock to Newcastle rail services via Kurri Kurri
38. Higher Speed Connections (east coast)
39. Delivery of Great Dividing Range long term solution
### Committed initiatives (0-10yrs):

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>Relevant customer outcome</th>
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| **New Intercity Fleet** | A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast. Key benefits include:  
• a two by two seat layout, wider seats with arm rests and more space  
• charging stations for each seat, digital screens, air conditioning, CCTV and passenger intercoms  
• dedicated space for luggage, prams, bicycles and wheelchairs, plus accessible toilets  
The first of the double deck trains will be delivered in 2019. | 2, 4, 9, 10 |
| **Nelson Bay Road improvements – Fern Bay to Williamtown** | This project includes planning for duplication of the section of Nelson Bay Rd from Fern Bay to Williamtown. It is expected that the project will be delivered in stages to ultimately provide a duplicated carriage way to the Newcastle Airport at Williamtown. | 5, 6, 7, 10 |
| **Newcastle Cruise Terminal** | A new multi-purpose cruise ship terminal at Channel Berth. | 5, 6 |
| **Cormorant Road, Industrial Drive to Stockton Bridge** | Completion of a second bridge and duplication of Cormorant Road from Industrial Drive to Stockton Bridge. This project is near completion. | 5, 6, 7, 10 |
| **Hunter Pinch Points** | This program includes several projects developed from the Inner Newcastle Traffic Study. Projects currently under development include:  
• Northcott and Kahibah Road intersection upgrades  
• Werribee and Tourle Street intersection upgrades  
Other projects form the Inner Newcastle Traffic Study will be progressed as funding permits. | 5, 6, 7, 10 |
| **Newcastle Inner City Bypass, Rankin Park to Jesmond** | 3.4 kilometre bypass between Rankin Park and Jesmond, to the west of John Hunter Hospital. The project includes new northern and southern interchanges and a western entrance to John Hunter Hospital. A pedestrian bridge is also being constructed over the road to the east of the northern interchange to replace a set of pedestrian signals. The pedestrian bridge is expected to start construction in mid 2019. | 5, 6, 7, 10 |
| **M1, Hexham, Raymond Terrace upgrades** | Upgrades to the strategic network of primary freight routes comprising of the New England Highway, M1 Pacific Motorway through to the Pacific Highway at Raymond Terrace and the strategic junction with the New England Highway and Hexham Straight. | 5, 6, 7, 10 |
| **Newcastle Light Rail** | A high capacity, frequent service through the Newcastle city centre with six stops at Wickham, Honeysuckle, Civic, Crown Street, Market Street and Pacific Park. | 3, 4, 5, 9, 10 |
| **Lower Hunter Freight Corridor Protection** | A future dedicated freight rail line to be constructed between Fassifern and Hexham, bypassing Newcastle while improving regional and interstate links. | 3, 7, 10 |
| **Road Network Strategies** | RMS will continue to work with local Councils in the preparation of Road Network Strategies. These Strategies will inform the development of longer term priorities for the Hunter State road network. | 5, 6, 7, 10 |
### Initiatives for investigation (0-10yrs)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>Relevant customer outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight corridor protection</td>
<td>Continue to protect key freight connections from incompatible development to support their role as key freight corridors.</td>
<td>6, 7, 10</td>
</tr>
<tr>
<td>Newcastle Light Rail network extension</td>
<td>Extension of the Newcastle Light Rail network and corridor preservation.</td>
<td>3, 4, 5, 9, 10</td>
</tr>
<tr>
<td>Greater Newcastle Rapid Bus Package</td>
<td>Implementation of programs to improve bus journey speed and reliability within Greater Newcastle.</td>
<td>3, 4, 5, 9</td>
</tr>
<tr>
<td></td>
<td>RMS and TfNSW are currently working with Newcastle Transport to identify bus priority schemes to be delivered on the network.</td>
<td></td>
</tr>
<tr>
<td>Bus headstart for Greater Newcastle</td>
<td>Early introduction of bus services on road networks that are designed for buses to serve housing release areas and connect them to key destinations.</td>
<td>3, 4, 5, 10</td>
</tr>
<tr>
<td>Greater Newcastle Place Plans</td>
<td>Plan and deliver an integrated transport network to improve access to/from/within key precincts within Greater Newcastle by all modes.</td>
<td>3, 4, 5</td>
</tr>
<tr>
<td></td>
<td>It is the application of the movement and place framework to improve the function of transport corridors to enhance the amenity of places.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It includes the development of an active transport network including identification of bicycle parking and initiatives for behaviour change to support more sustainable travel options. This includes travel demand management policies and tools to support changes to operational practices to positively influence travel behaviour change.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Key precincts in Greater Newcastle include the DPE’s identified catalyst areas and strategic centres as well as major travel generators such as the University of Newcastle, major hospitals, shopping centres and the Hunter Sports and Entertainment Precinct.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>They will be undertaken in consultation with key stakeholders such as local government and other Government agencies.</td>
<td></td>
</tr>
<tr>
<td>Improvements to Newcastle port</td>
<td>Support the growth and diversification of port export operations, including bulk fuels, containers, agricultural commodities and general cargo.</td>
<td>5</td>
</tr>
<tr>
<td>Nelson Bay Road improvements - Williamtown to Bobs Farm</td>
<td>Upgrade Nelson Bay Road between Williamtown and the Tomaree Peninsula, including safety measures.</td>
<td>5</td>
</tr>
<tr>
<td>Sydney-Central Coast-Newcastle Faster Rail improvement</td>
<td>A program of fleet and targeted fixed infrastructure improvements (for example, new deviations to eliminate curvatures and flatten grades). This could include a new rail crossing of the Hawkesbury River.</td>
<td>5, 10</td>
</tr>
<tr>
<td>Great Dividing Range long term solution study</td>
<td>A strategic examination of options to improve freight connectivity across the Great Dividing Range from inland areas to Newcastle/ Sydney/Wollongong.</td>
<td>4, 6, 10</td>
</tr>
<tr>
<td>Initiative</td>
<td>Description</td>
<td>Relevant customer outcome</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Great Dividing Range long term solution corridor preservation</td>
<td>Corridor preservation to improve freight connectivity across the Great Dividing Range in order to connect inland areas to Sydney/Newcastle/Wollongong.</td>
<td>4, 6, 10</td>
</tr>
<tr>
<td>Travel demand management policies and tools</td>
<td>In addition to those included as part of the Place Plan work, the development of travel demand management tools and policies to support behaviour change as well as support activities that generate demand at particular periods such as during events and holiday periods.</td>
<td>2, 10</td>
</tr>
<tr>
<td>Cycling improvements</td>
<td>Investment in the Greater Newcastle Regional Bicycle Network in collaboration with local councils.</td>
<td>3, 4, 10</td>
</tr>
<tr>
<td>Parking guidelines</td>
<td>Develop parking guidelines relevant to the Greater Newcastle area, including providing guidance on park and ride, car share, car-pooling and parking provision in centres.</td>
<td>4, 5, 9, 10</td>
</tr>
<tr>
<td>Last mile freight delivery</td>
<td>Work with Greater Newcastle Councils to develop a plan to optimise last mile freight delivery.</td>
<td>2, 6</td>
</tr>
<tr>
<td>Technology-enhanced Mobility Implementation Strategy</td>
<td>Development of a Technology-enhanced Mobility Implementation Strategy for Greater Newcastle that addresses:</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• The strategies and actions in the NSW Future Transport Technology Roadmap.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Strategies for increasing the sustainability, environmental performance and customer benefits of public and personal transport, including provision for electric vehicle charging and assessing the feasibility of introducing electric buses.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The steps required to prepare for connected, automated and electric vehicles, including the public transit system, active transport, parking and the hi-tech manufacturing and technology sectors for automated vehicles.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How data will be managed and improved to enable on demand transport services, shared-use and accessible timetable information systems.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Opportunities to improve the lifestyle for Greater Newcastle residents by using more public, active and shared transport for more trips.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How technology can increase mobility and reduce the need to travel in Greater Newcastle.</td>
<td></td>
</tr>
<tr>
<td>On demand services</td>
<td>Investigate the delivery of on demand services to increase accessibility across Greater Newcastle.</td>
<td>1, 10</td>
</tr>
</tbody>
</table>
## Initiatives for investigation (10-20 years)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>Relevant customer outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 – Newcastle SMART Motorway</td>
<td>The M1 Newcastle Smart Motorway project will introduce intelligent technology, known as a motorway management system. This includes variable speed limits, dynamic message signs and – where appropriate – ramp meters to meter traffic flows.</td>
<td>2, 5, 7</td>
</tr>
<tr>
<td>Corridor Preservation for Higher Speed Connections</td>
<td>Confirm and begin the preservation of a corridor, based on the corridor set out in the Australian Government’s High Speed Rail Study Phase 2, for a high speed rail link between Melbourne, Sydney and Brisbane.</td>
<td>2, 5</td>
</tr>
<tr>
<td>Newcastle Ferry Network extension</td>
<td>To extend ferry services between Stockton and Queens Wharf to Wickham. This will facilitate interchange with heavy rail services. Consideration of an on demand, special events ferry service between the new ferry wharf at Wickham and the Newcastle Cruise Terminal at Channel Berth.</td>
<td>5, 10</td>
</tr>
<tr>
<td>Lower Hunter Freight Corridor</td>
<td>Lower Hunter Freight Corridor to enable a future dedicated freight rail line to be constructed between Fassifern and Hexham, bypassing Newcastle while improving regional and interstate links.</td>
<td>5, 6</td>
</tr>
<tr>
<td>Tomago Road improvements – Pacific Highway to Williamtown</td>
<td>Upgrade Tomago Road between the Pacific Highway and Newcastle Airport at Williamtown.</td>
<td>5, 10</td>
</tr>
<tr>
<td>Outer Metro Roads Program</td>
<td>Program to improve the road network in Greater Newcastle.</td>
<td>4, 5, 10</td>
</tr>
<tr>
<td>Dubbo to Newcastle rail connection</td>
<td>Develop existing coach connection between Dubbo and Newcastle into a passenger rail line.</td>
<td>5, 10</td>
</tr>
</tbody>
</table>
## Visionary initiatives (20+ years)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Description</th>
<th>Relevant customer outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>New suburban type rail service for Greater Newcastle</td>
<td>The development of the Lower Hunter Freight Corridor may result in the potential for suburban rail services to operate within Greater Newcastle. This may include additional services to the existing rail lines.</td>
<td>4, 5, 8, 9, 10</td>
</tr>
<tr>
<td>Electrification of the Hunter Line to Telarah</td>
<td>Extension of the electrified Intercity Rail network to Telarah from Hamilton.</td>
<td>5, 10</td>
</tr>
<tr>
<td>New rail alignment of North Coast Line between Newcastle and Stroud Road – investigation corridor</td>
<td>Creating a more direct rail connection between the Lower Hunter Freight corridor at Hexham to Stroud Road.</td>
<td>4</td>
</tr>
<tr>
<td>Cessnock to Newcastle rail services via Kurri Kurri</td>
<td>Introduction of a passenger rail service between Cessnock and Newcastle.</td>
<td>4</td>
</tr>
<tr>
<td>Higher Speed Connections (east coast)</td>
<td>Deliver a high speed transport connection along the East Coast of NSW (traversing Greater Sydney).</td>
<td>2, 5, 6, 9</td>
</tr>
<tr>
<td>Delivery of Great Dividing Range long term solution</td>
<td>Delivery of solution to improve freight connectivity across the Great Dividing Range in order to improve connectivity from inland areas to Sydney/Newcastle/Wollongong.</td>
<td>4, 6, 10</td>
</tr>
</tbody>
</table>
Statewide initiatives

In addition to the initiatives listed specific to Greater Newcastle, Chapter 4 of the Regional NSW Services and Infrastructure Plan details the infrastructure, policy and service initiatives that apply to all of regional NSW, including Greater Newcastle.

Statewide Service Initiatives

<table>
<thead>
<tr>
<th>Category</th>
<th>0-10 years committed</th>
<th>0-10 years for investigation</th>
<th>10-20 years for investigation</th>
<th>20+ years visionary</th>
</tr>
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<tbody>
<tr>
<td>ALL MODES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliver the Regional Passenger Transport Strategic Framework and Delivery Model</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Deliver Hub and Spoke Model</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>AVIATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase availability of regional slots at Sydney’s airports during peak hours</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>RAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail Network Optimisation Program</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Deliver Regional Rail Fleet Project</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>ON DEMAND</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand responsive transport services</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>ACTIVE TRANSPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active Transport Sharing Scheme</td>
<td>✓</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>TECHNOLOGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aerial technology use</td>
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</table>

For further investigation if initiative is successful and/or required

Figure 85: Statewide service initiatives
## Statewide Policy and Planning Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>0-10 years committed</th>
<th>0-10 years for investigation</th>
<th>10-20 years for investigation</th>
<th>20+ years visionary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL MODES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Transport Plans</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
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<tr>
<td>Place plans</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Access Prioritisation Plan</td>
<td>●</td>
<td>○</td>
<td>●</td>
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<tr>
<td>Regional Parking Guidelines</td>
<td>●</td>
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<tr>
<td>Transport Corridor Planning</td>
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<td>●</td>
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<tr>
<td><strong>ROAD</strong></td>
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<tr>
<td>Road Classification Review</td>
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<tr>
<td>Road network management system</td>
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<td>●</td>
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<tr>
<td>Fleet leasing policy</td>
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<tr>
<td>Fuel vouchers policy</td>
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<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Car share package</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Town bypasses, identification of future need</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Implementation of traffic incident and information services</td>
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<tr>
<td><strong>PUBLIC TRANSPORT – BOOKING AND TICKETING</strong></td>
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<tr>
<td>Regional Booking System</td>
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<td>●</td>
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<tr>
<td>Mobility as a Service (MaaS)</td>
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<tr>
<td>Next generation ticketing</td>
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<td>Fare alignment</td>
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<tr>
<td>Cross border public transport pricing and regulation MoUs</td>
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<tr>
<td><strong>RAIL</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rail Network Optimisation Program</td>
<td>●</td>
<td>○</td>
<td>●</td>
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<tr>
<td>Regional Rail Fleet Project</td>
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<td>○</td>
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<tr>
<td><strong>BUS</strong></td>
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<td>Country Passenger Infrastructure Grants Scheme</td>
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<tr>
<td><strong>ON DEMAND</strong></td>
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</tr>
<tr>
<td>School Bus and Community Transport Model development</td>
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</tr>
<tr>
<td><strong>PUBLIC TRANSPORT – OTHER</strong></td>
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<tr>
<td>First stop Transport</td>
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<tr>
<td><strong>MARITIME</strong></td>
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<tr>
<td>Maritime Safety Program</td>
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<tr>
<td><strong>ACTIVE TRANSPORT</strong></td>
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</tr>
<tr>
<td>Assisted Mobility Device Strategy</td>
<td>●</td>
<td>○</td>
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<td>○</td>
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<tr>
<td><strong>ASSET MANAGEMENT</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>‘Whole of life’ Approach Plan</td>
<td>●</td>
<td>○</td>
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<td>○</td>
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<tr>
<td><strong>TECHNOLOGY</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CAV, electric vehicle and Intelligent Transport System trials</td>
<td>●</td>
<td>○</td>
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</tr>
<tr>
<td>CAV Readiness Program</td>
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<td>○</td>
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<tr>
<td>Electric Vehicle Policy</td>
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<td><strong>DATA</strong></td>
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<tr>
<td>Data collection improvements for Regional NSW</td>
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<td>○</td>
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</tr>
</tbody>
</table>

● For further investigation if initiative is successful and/or required

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*Figure 86: Statewide policy and planning initiatives*
## Statewide Infrastructure Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>0-10 years committed</th>
<th>0-10 years for investigation</th>
<th>10-20 years for investigation</th>
<th>20+ years visionary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL MODES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuation of port efficiency, access and integration initiatives</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Deliver Place Plans</td>
<td>●</td>
<td>○</td>
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<td></td>
</tr>
<tr>
<td>Deliver Access Prioritisation Plan</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Deliver Transport Corridor Planning</td>
<td></td>
<td></td>
<td></td>
<td>●</td>
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<tr>
<td><strong>ROAD</strong></td>
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<tr>
<td>Resilience Package</td>
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<tr>
<td>Towards Zero Infrastructure Program</td>
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<tr>
<td>Local Government Road Safety Program</td>
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</tr>
<tr>
<td>Sealing Country Roads Program</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Bridges for the Bush Program</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Slopes and Culverts Condition Program</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Fixing Country Roads</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Heavy vehicle rest areas</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Last Mile Productivity Program</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Deliver Road Network Management System</td>
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<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Safer Roads Program</td>
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<td>○</td>
<td>○</td>
<td>●</td>
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<tr>
<td>Regional Road Freight Corridor Fund</td>
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<td>Saving Lives on Country Roads Program</td>
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<td>Implementation of Traffic Incident and Information Services</td>
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<td>Deliver Town Bypasses</td>
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<td><strong>AVIATION</strong></td>
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<td>Regional Airports Program</td>
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<td><strong>RAIL</strong></td>
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<td>Deliver New Intercity Fleet</td>
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<td>Fixing Country Rail</td>
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<td>Rail Network Optimisation Program</td>
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<td>Deliver Regional Rail Fleet Project</td>
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<td><strong>INTERCHANGES</strong></td>
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<td>Transport Access Program</td>
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<td>Deliver Inland Port</td>
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<td><strong>MARITIME</strong></td>
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<td>Deliver NSW Boating Now Program</td>
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<td>Deliver Maritime Safety Program</td>
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<td><strong>ACTIVE TRANSPORT</strong></td>
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<td>Deliver Walking and Cycling Program</td>
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<td><strong>TECHNOLOGY</strong></td>
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<td>Intelligent Transport Systems</td>
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<td>Deliver CAV Readiness Program</td>
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<td>Deliver Electric Vehicle Policy</td>
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<td>Deliver Regional Booking System</td>
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</table>

● For further investigation if initiative is successful and/or required
○ Continuation of initiative, investigation of program funding

Figure 87: Statewide infrastructure initiatives
CHAPTER 5
Next steps
We will use the Greater Newcastle Future Transport Plan to progress detailed planning for specific initiatives, consider funding and delivery options and track our performance in delivering on the customer outcomes. We will continue to engage with our customers, the community and stakeholders to ensure our plans are meeting the needs of customers and being responsive to new challenges and opportunities.

Continuing to engage with our customers

The Greater Newcastle Future Transport Plan is a ‘living’ plan that will continue to be updated as the area changes, technology evolves and new opportunities emerge. An agile and flexible approach is the hallmark of our approach to planning in Future Transport 2056.

This means we will continue to engage closely with our customers, the community and stakeholders, including federal and state departments and agencies, local councils and industry. This will be important for ensuring that customer, community and stakeholder insights inform more detailed planning and that this planning is integrated across government and with industry. In turn, initiatives identified in the Greater Newcastle Future Transport Plan will continue to reflect existing plans and work that is currently being undertaken by key stakeholders such as local councils.

In consultation on the draft Plan, our customers told us that they want more input into the planning of transport infrastructure and services. By closely engaging with our customers as we update the Plan and progress detailed planning, we will be responsive to this feedback.

Progressing our plans

Establishing customer outcomes and a vision for our transport system, and identifying and prioritising initiatives to deliver on these is just the first step in planning for the future. To ensure we are delivering the best outcomes for customers and the community, we will undertake detailed planning and feasibility studies for specific initiatives as part of the business case process. This process will ensure initiatives that are progressed for funding and delivery deliver value for money for the people of NSW.
Funding and delivery

Our commitment is to ensure the transport system is financially sustainable, meeting the needs of our customers and the community and enabling us to continue investing in services and infrastructure. That is why we have prioritised initiatives, to ensure we can stage delivery starting with those that we believe will deliver the greatest benefit.

As initiatives progress to business case phase, we will investigate a range of funding and delivery options to ensure value for money.
Staging of initiatives

Our plan prioritises initiatives on the basis of existing NSW Government commitments and the challenges addresses, in order to importance. Initiatives are staged over 0-10, 10-20 and 20+ year periods, with existing infrastructure commitments, upgrades, service and policy initiatives a key focus in the first decade.

Infrastructure initiatives deliver significant benefits for our customers and the community, but they are capital-intensive and take time to plan and deliver, which is why initiatives are staged. On corridors where major new infrastructure is not yet needed, upgrades to existing infrastructure or service improvements may suffice.

As we undertake more detailed planning, we will review the proposed staging to ensure we are achieving the best outcomes for our customers.

Sources of funding

One of our objectives is to ensure the transport system is financially sustainable through informed decision-making and services and infrastructure being delivered, operated and maintained in a way that is affordable over the long-term.

There are many sources of funding for transport projects. User charging will remain a source of funding but will be complemented by other measures as the way we build and operate transport becomes more sophisticated. Mechanisms such as value sharing and development of government land to fund transport infrastructure will be investigated as we look for innovative and efficient ways to fund our transport projects.

Delivery mechanisms

As part of evaluating initiatives, we will consider a range of delivery mechanisms, consistent with the directions in the Future Transport Strategy. Where appropriate, we will partner with industry to delivery transport initiatives – whether this be enabling new services and infrastructure to be developed by industry or continuing to engage the private sector to deliver, operate and maintain services and infrastructure.

Local Government will also be a key partner for delivery of the Greater Newcastle Future Transport Plan. For initiatives related to cycling paths, local road upgrades, local footpaths and travel demand management and behaviour change initiatives, local councils will be an essential partner.

Implementation

The Greater Newcastle Future Transport Plan will be implemented through collaborative governance arrangements. Essential to this process will be alignment with the DPE’s Greater Newcastle Metropolitan Plan - Implementation Plan 2018-2020, and engagement with key stakeholders including the Hunter Regional Leadership Executive, Hunter Development Corporation and local Councils.
Glossary
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>The ability for everyone, regardless of disability, personal circumstances or where they live, to use and benefit from the transport system.</td>
</tr>
<tr>
<td>Access Prioritisation Plan</td>
<td>Strategic plan using the Movement and Place Framework that identifies initiatives to prioritise access to interchanges, corridors and key places. Will consider the need for access to be prioritised by high efficiency passenger and freight services as well as providing access for shared, connected, automated and electric vehicles.</td>
</tr>
<tr>
<td>Active transport</td>
<td>Transport that is human-powered, such as walking or cycling.</td>
</tr>
<tr>
<td>Active transport sharing scheme</td>
<td>Investment in an AMD and electric bike sharing scheme 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.</td>
</tr>
<tr>
<td>Aerial mobility technology</td>
<td>The use of aerial technology such as drones for transport. They may be used to deliver emergency transport services, disaster responses or last mile freight deliveries.</td>
</tr>
<tr>
<td>Assisted Mobility Devices (AMD)</td>
<td>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.</td>
</tr>
<tr>
<td>Assisted Mobility Device (AMD) Strategy</td>
<td>Development of a policy and regulatory framework to manage the safe introduction and promotion of AMDs that considers advancing technology and automation.</td>
</tr>
<tr>
<td>Automation</td>
<td>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.</td>
</tr>
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<tr>
<td>Bridges for the Bush Program</td>
<td>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.</td>
</tr>
<tr>
<td>Bus Headstart</td>
<td>Bus routes implemented in new growth areas to encourage early public transport use.</td>
</tr>
<tr>
<td>Car Pooling</td>
<td>Carpooling is two or more people agreeing to travel by private car together, to the same destination, a destination along the route or within the vicinity of the driver’s destination. The direct operating costs (e.g. petrol, parking, tolls) are shared noting that carpooling is a non-commercial operation with no element of service charge.</td>
</tr>
<tr>
<td>Car share</td>
<td>A model of car rental, with the ability to rent a car for a short period of time, often by the hour.</td>
</tr>
<tr>
<td>Car Share Package</td>
<td>Package to facilitate car share in regional NSW.</td>
</tr>
<tr>
<td>Catchment</td>
<td>The area from which a location or service attracts people.</td>
</tr>
<tr>
<td>CAV, electric vehicle and intelligent transport system trials</td>
<td>Trials of CAVs, electric vehicles (including buses) and intelligent transport systems to support safer and more efficient movement of people and goods.</td>
</tr>
<tr>
<td>CAV Readiness Program</td>
<td>Program to ensure CAV and autonomous vehicle readiness, including smarter roads and incorporating design standards to support CAVs to enable the strategic road network to adapt to accommodation the evolution of future CAVs for freight and passenger movement.</td>
</tr>
<tr>
<td>Committed initiatives (0-10 years)</td>
<td>Projects, service changes or policies 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 committed initiatives are subject to final business cases and funding.</td>
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<tr>
<td>Connected and Autonomous Vehicles (CAVs)</td>
<td>A connected vehicle is able to communicate wirelessly with other vehicles, infrastructure and/or devices. An automated vehicle has one or more element of the driving task that is automated and therefore does not require a human driver for at least part of the driving task. Levels of automation range from assisting the human driver with the driving task, through to fully and highly automated vehicles that can drive themselves. “Connected and automated vehicle” is widely used as a collective term to refer to the full range of different vehicles equipped with varying ranges and capabilities of connected and/or automated vehicle technologies.</td>
</tr>
<tr>
<td>Corridor</td>
<td>A broad, linear geographic area between places.</td>
</tr>
<tr>
<td>Country Passenger Transport Infrastructure Grant Scheme (CPTIGS)</td>
<td>Provides subsidies to support the construction or upgrade of bus stop infrastructure generally owned and maintained by local councils across country NSW to be accessible (DDA compliant). $3,252,000 was available in most recent biennial funding round (2017/19).</td>
</tr>
<tr>
<td>Customer</td>
<td>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.</td>
</tr>
<tr>
<td>Customer outcomes</td>
<td>The economic, social and environmental benefits which customers can expect from the transport system and are used by planners to guide investment, policy and reform and service provision.</td>
</tr>
<tr>
<td>Demand responsive transport services (on-demand)</td>
<td>Transport services that are responsive to the demands of individual customers, rather than a fixed timetable or route. They can provide new or improved coverage to areas where traditional public transport is difficult to provide. They may act as feeder services to stronger public transport corridors.</td>
</tr>
<tr>
<td>Disability Discrimination Act (DDA) (1992)</td>
<td>A Commonwealth Act that makes it unlawful to discriminate against a person, in many areas of public life, including: employment, education, getting or using services, renting or buying a house or unit, and accessing public places, because of their disability.</td>
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<tr>
<td>Drone</td>
<td>An unmanned aerial vehicle (UAV) which may be remotely controlled or can fly autonomously.</td>
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<tr>
<td>Faster Rail</td>
<td>Major investments in track straightening and signalling improvements to maximise the operational capabilities of the New Intercity Fleet and new Regional Rail fleet between Sydney, Central Coast/Newcastle, Canberra and Wollongong/Illawarra.</td>
</tr>
<tr>
<td>First mile / last mile</td>
<td>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.</td>
</tr>
<tr>
<td>First Stop Transport</td>
<td>Resources to teach people how to use public transport, as well as resources for helping others to use public transport. There is also a program that provides travel training. <a href="http://firststop.transportnsw.info/contacts-for-travel-training.html">http://firststop.transportnsw.info/contacts-for-travel-training.html</a></td>
</tr>
<tr>
<td>Fixing Country Rail</td>
<td>NSW Government program that provides targeted funding for rail infrastructure enhancement projects that eliminate connectivity constraints on the NSW regional rail network.</td>
</tr>
<tr>
<td>Fixing Country Roads</td>
<td>NSW Government program that provides targeted funding to local councils to repair and upgrade regional NSW roads.</td>
</tr>
<tr>
<td>Fleet</td>
<td>The collective vehicles of a transport company or service.</td>
</tr>
<tr>
<td>Fleet leasing policy</td>
<td>Policy for the NSW Government Transport Cluster to use safer and lower emissions vehicles to result in reduced costs and improved health outcomes of staff and communities and to accelerate uptake in regional communities of safer and cleaner vehicles.</td>
</tr>
<tr>
<td>Flexible (or demand responsive) transport</td>
<td>Transport services that are run based on the demands of individual customers, rather than a fixed timetable or route.</td>
</tr>
<tr>
<td>Freight</td>
<td>Goods or cargo transported by truck, light commercial vehicles (e.g. vans and utes), cycle couriers, rail, aircraft or ship.</td>
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<tr>
<td>Global gateway cities</td>
<td>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, Greater Newcastle and Gold Coast are global gateway cities that support NSW.</td>
</tr>
<tr>
<td>Greater Newcastle</td>
<td>The area comprising five local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens.</td>
</tr>
<tr>
<td>Heavy vehicle rest areas</td>
<td>Provision of rest areas along key freight corridors. RMS is currently undertaking a refresh of the Heavy Vehicle Rest Area Strategy, with data collected on the use of various rest areas across the state. Usage surveys have also been undertaken to understand how the customer is utilising various rest areas, including service centres, and how we could plan them better. This information will be used to inform future planning for rest areas along state highways.</td>
</tr>
<tr>
<td>High Productivity Vehicle (HPV)</td>
<td>A vehicle (eg a semi-trailer, truck and dog combination or B-double / B-triple) that is able to carry a greater payload than the maximum sized vehicle permitted on the particular road. This is due to being greater in length or height, and normally has a performance based operating system that enables the vehicle to track better across the road network. Due to the greater mass and size of these vehicles, there is an increased focus to ensure the road environment can facilitate these vehicles safely, for example overtaking lanes, rest areas, bridges and culverts.</td>
</tr>
<tr>
<td>Hub and Spoke Model</td>
<td>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 focusing on one key hub. It provides regional trunk public transport services that connect to key centres which are supported by a network of intra-regional transport services that connect to smaller towns and villages. It aims to provide more convenient public transport arrival and departure times, including day return services to regional cities and centres.</td>
</tr>
<tr>
<td>Inland NSW connections</td>
<td>Strategic examination of options to connect inland NSW to Sydney, Newcastle and/or Wollongong. It will consider existing roads such as Great Western Highway, Bells Line of Road and Golden Highway as well as rail corridors.</td>
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<tr>
<td>Initiatives for investigation (0-10 years, 10-20 years)</td>
<td>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 funding and strategic business cases that consider a range of possible solutions.</td>
</tr>
<tr>
<td>Intelligent Transport System</td>
<td>The application of computing, electronics, information technology and communications to solve transport problems. We will review and implement Intelligent Transport Systems for managing connected vehicles and infrastructure where it is cost effective to do so. An example of an Intelligent Transport System is Cooperative Intelligent Transport Systems (CITS). CITS allow vehicles to communicate with other vehicles and infrastructure. They enable greater safety and can optimise the management of pedestrian movement and vehicle traffic.</td>
</tr>
<tr>
<td>Interchange</td>
<td>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.</td>
</tr>
<tr>
<td>Intermodal terminal</td>
<td>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.</td>
</tr>
<tr>
<td>Journey to Work</td>
<td>Data collected as part of the Census every 5 years on where workers travel to work and by what mode.</td>
</tr>
<tr>
<td>Last Mile Productivity Program</td>
<td>Package of works that will focus on improving first and last mile connectivity and efficiency for the freight network.</td>
</tr>
<tr>
<td>Level Crossing Improvement Program</td>
<td>Funding for level crossing upgrades and initiatives to support safety awareness and police enforcement campaigns.</td>
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<tr>
<td>Light rail</td>
<td>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.</td>
</tr>
<tr>
<td>Liveability</td>
<td>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.</td>
</tr>
<tr>
<td>Local Government Road Safety Program</td>
<td>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.</td>
</tr>
<tr>
<td>Maritime Safety Program</td>
<td>Delivery of the NSW Regional Boating Plans.</td>
</tr>
<tr>
<td>Mobility as a Service (MaaS)</td>
<td>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.</td>
</tr>
<tr>
<td>Mode Share</td>
<td>The proportion of overall trips that are taken on a particular mode.</td>
</tr>
<tr>
<td>Movement and Place Framework</td>
<td>A framework for planning, designing and operating our road network based on a ‘one road network’ approach. It considers how different parts of the network perform different functions – moving people and goods and being places for people, particularly in centres.</td>
</tr>
<tr>
<td>New Intercity Fleet</td>
<td>A new fleet of long distance, intercity trains from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast. As part of the delivery of the fleet, we will investigate reduced rail journey times through rail timetable improvements and the implementation of rail network optimisation strategies. This may include re-orientating rail services to provide express services between key stations and connector services between other stations.</td>
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<tr>
<td>NSW Boating Now Program</td>
<td>Program to support initiatives that enhance the boating experience in NSW, including the delivery of recreational boating infrastructure across NSW waterways.</td>
</tr>
<tr>
<td>On demand transport</td>
<td>See definition for demand-responsive.</td>
</tr>
<tr>
<td>Outer Metro Parking Guidelines</td>
<td>Development of a strategy encompassing the Movement and Place Framework to guide local government in the delivery of parking in Outer Metro NSW.</td>
</tr>
<tr>
<td>Personalised transport</td>
<td>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.</td>
</tr>
<tr>
<td>Place-making</td>
<td>Successful place-making either preserves or enhances the character of our public spaces, making them more accessible, attractive, comfortable and safe.</td>
</tr>
<tr>
<td>Point-to-point</td>
<td>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 modes.</td>
</tr>
<tr>
<td>Port Efficiency, Access and Integration Initiative</td>
<td>Road and rail projects to improve port access, efficiency and integration.</td>
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<td>Definition</td>
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<tr>
<td>Place Plan</td>
<td>Plan to deliver an integrated transport network to improve access to/from/within key places or centres by all modes.</td>
</tr>
<tr>
<td></td>
<td>It is the application of the Movement and Place Framework to improve the function of transport corridors to enhance the amenity of places. It will include the development of an active transport network, identifying the missing links and initiatives for behaviour change to support more sustainable travel options.</td>
</tr>
<tr>
<td></td>
<td>Place plans will also include travel demand management policies and tools to support travel such as car sharing and to assist workers and employers better manage travel demand.</td>
</tr>
<tr>
<td>Precinct</td>
<td>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.</td>
</tr>
<tr>
<td>Rail Network Optimisation Program</td>
<td>Program that aims to improve efficiency in rail services.</td>
</tr>
<tr>
<td>Rapid bus package</td>
<td>Implementation of programs to prioritise access for buses over private vehicles.</td>
</tr>
<tr>
<td>Regional Airports Program</td>
<td>Improvements to increase the 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. Funding from the Regional Tourism Infrastructure Fund.</td>
</tr>
<tr>
<td>Regional Booking System</td>
<td>Flexible transport booking system enabled across all service providers.</td>
</tr>
<tr>
<td>Regional NSW</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td><strong>Definition</strong></td>
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</tr>
<tr>
<td>Regional Parking Guidelines</td>
<td>Development of a strategy encompassing the Movement and Place Framework to guide local government in the delivery of parking in regional NSW.</td>
</tr>
</tbody>
</table>
| Regional Passenger Transport Strategic Framework and Delivery Model | The adoption of a framework and delivery model for passenger transport services in regional NSW that focuses on connectivity, flexibility and efficiency, access and equity, legibility and timeliness as well as information. It aims to provide:  
› Faster long distance trips  
› Greater access and span of hours  
› More frequent services  
› Improved services and facilities to enable increased capacity |
<p>| Regional Rail Fleet Project | Program to deliver a new regional rail fleet, including the replacement of the XPT, XPLORER and Endeavour trains, new rail stabling and maintenance facilities. |
| Regional Road Freight Corridor Fund | Program to upgrade key regional highways, ensuring regional producers can transport goods on time and in a cost effective manner. |
| Resilience Package | Program to support immunity for flood prone regional roads. |
| Ridesharing | Business models similar to Uber and Lyft within which private citizens provide point-to-point transport services to other citizens. |
| Road Classification Review | A review of how roads are classified in NSW. The classification of roads determines responsibility and resource allocation. |
| Road hierarchy | A framework for categorising roads by function. Consistent with the Movement and Place Framework, the hierarchy consists of Motorways, Movement Corridors, Living Streets, Local Streets and Places for People. Each type of road has a different movement and place function. |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road network management system</td>
<td>The implementation of a multi-modal system that enables live monitoring of network performance across all passenger and freight modes using motorways and highways.</td>
</tr>
<tr>
<td>Rural Roads Network Enhancement Program</td>
<td>Program of works across the state to deliver enhancements and improvements e.g. overtaking lanes, shoulder widening, clear zones, curve realignment, intersection improvements etc</td>
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<tr>
<td>Safer Roads Program</td>
<td>Program of road safety infrastructure projects to address key crash types across NSW.</td>
</tr>
<tr>
<td>Safe System Approach</td>
<td>Planning services and designing infrastructure to integrate with human behaviour to prevent trauma. A safe system approach aims to improve the safety of all parts of the system, so that if one part fails, the other parts will protect people from being killed or seriously injured.</td>
</tr>
<tr>
<td>Satellite city</td>
<td>The cities of Wollongong and Gosford that form part of the conurbation of Greater Sydney.</td>
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<tr>
<td>Saving Lives on Country Roads program</td>
<td>Program to install and upgrade safety features on country roads and reduce run off road crashes, crashes on curves and head on crashes.</td>
</tr>
<tr>
<td>School Bus and Community Transport Model development</td>
<td>Development of a model that considers the conversion of school bus and Community Transport services to provide access for all communities.</td>
</tr>
<tr>
<td>Sealing Country Roads Program</td>
<td>Program of works to progressively seal unsealed roads in regional NSW.</td>
</tr>
<tr>
<td>Service (or transport service)</td>
<td>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.</td>
</tr>
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<tr>
<td>Slopes and Culverts Condition Program</td>
<td>Program of works to progressively improve the conditions of slopes and culverts in the transport network.</td>
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<tr>
<td>Smart Motorway</td>
<td>Motorways that use embedded sensors, analytics and customer feedback tools to actively manage congestion and safety and respond to traffic incidents.</td>
</tr>
<tr>
<td>State Infrastructure Strategy</td>
<td>The State Infrastructure Strategy, developed by Infrastructure NSW, provides the NSW Government with independent advice on the infrastructure needs of the State over the next 20 years.</td>
</tr>
<tr>
<td>Towards Zero Infrastructure Program</td>
<td>Program of additional road safety infrastructure measures for rural and regional roads to reduce head-on and run off road crashes. The program will be considered as part of the NSW Road Safety Plan 2021, which includes additional measures to improve road safety.</td>
</tr>
<tr>
<td>Transport Access Program</td>
<td>The Transport Access Program (TAP) is an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure such as stations, wharves and commuter car parks</td>
</tr>
<tr>
<td>Transport Corridor Planning</td>
<td>A corridor in the context of strategic planning is a broad, geographic linear area rather than a specific road or train line. Planning for the needs of a corridor ensures that different transport investments work together as part of an integrated solution.</td>
</tr>
<tr>
<td>Transport disadvantage</td>
<td>Describes a result when certain factors such as language, age and cost result in causing less choice for when, where and how customers travel.</td>
</tr>
<tr>
<td>Transport Taxi Subsidy Scheme (TTSS)</td>
<td>Support for NSW residents who are unable to use public transport because of a disability.</td>
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<tr>
<td><strong>Visionary initiatives (20+ years)</strong></td>
<td>Longer term initiatives that may be investigated within the next 10 years, but on preliminary evidence are unlikely to require implementation within 20 years. Some initiatives have been 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 funding and strategic business cases that consider a range of possible solutions.</td>
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<tr>
<td><strong>Walking and Cycling Programs</strong></td>
<td>Programs to improve walking and cycling connections.</td>
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<tr>
<td><strong>‘Whole of life’ Approach Plan</strong></td>
<td>Develop strategy that re-focuses asset management to adopt a ‘whole of life’ approach – plan, build and manage assets now and into the future that are safe and available, provide the desired operational performance in a reliable, sustainable, presentable and affordable manner.</td>
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</tbody>
</table>
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