

Transport  
for NSW



# Draft Central Coast Regional Transport Plan 2041

A 20 year vision



# Acknowledgement to Darkinjung Country

Darkingung, Darginyung, Darkinjang, Darkin-nyoong,  
Darkinung, or Darkinyung'

Transport for NSW acknowledges and pays respects to the Traditional custodians of the Central Coast Region the lands of the Darkinjung people who have a continuous deep physical and spiritual connection to these lands. Transport acknowledges those ancestors that have defended, walked and managed these lands for many generations before us and who have left a legacy of strong cultural, wisdom and knowledge that is embedded in Darkinjung lands today.

Darkinjung Country (Ngura) is bounded by the Hawkesbury River (Deerubbin) to the south, McDonald River and Wollombi Ranges to the west, the Pacific Ocean to the east, and Lake Awaba – Lake Macquarie to the north. The neighbouring nations are the Gadigal people of the Eora Nation to the south, the Dharug Nation to the south-west, the Wonaruah Nation to the north-west, and the Awabakal Nation to the north.

Many of the transport pathways we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial pathways of Country that Aboriginal people have followed for tens of thousands of years. As noted in Transport's vision for Reconciliation, "our transport system is a living, breathing network that connects us with each other and which carries our stories across cultural border lines." These pathways continue to endure while new layers of movement networks and places are laid down as the Central Coast continues to grow into a future-focused and vibrant regional city.

In preparing this plan Transport recognises that all Aboriginal First Nation groups have a continuous deep connection through their ceremonial pathways, connections with their lands, language and story and pay respect to the cultural values of all Aboriginal communities and their families.



# Connection with Country

Darkinjung people are known as the People of the Mountains to the Sea, their Country being the Central Coast Region. Traditionally they made and wore possum and coastal grey kangaroo cloaks, and the land provided an abundant supply of resources that provided materials for tool making and weapons that were used in their everyday life. The natural environment of fresh water, salt water lagoons, rivers, beaches, estuaries, rainforests and lake systems provided plenty of staple foods with multiple varieties of berries, essential oils and medicinal resources. Food gathering and preparation was a seasonal practice with treks across country for trade.

To Connect with Country is to be one in mind, body and spirit with Country. To Connect with Country is to know the story of Country. The story of Country is embedded in the land and its people.

Darkinjung people believe that *Baiyami* was the creator god and sky father, and created us as human beings, and from our ancestral beings which are now all the plants and animals of mother earth, this is our religious connection to the land through Totemship and Kinship Lore. The Creation story is depicted at Bulgandry Rock engraving site located at Kariong which is over 10,000 years old. *Baiyami* came down in his *Nawi* (canoe), and on arrival crushed the top of the sacred Mountain of Yango giving it its flattened top. In dreamtime legend, he stepped back up into the sky world after creation.

During *Baiyami's* time on earth he walked across the land and where he walked, he left his footprints forever to be seen etched into the landscape known

as *Mundoe's*, awakening Gurria the Spirit of the land, the rainbow serpent. Gurria interacted between mythological ancestral beings, the environment, plants, birds, and animals going in and out of the land creating the water ways, carving out the valleys and Mountains which became the water holes, rivers and creeks of today. Gurria went back into the land to rest after creation. These areas are very sacred and must not be disturbed to this day in Darkinjung Lore.

The Darkinjung conceived of *Baiyami* and *Duramulan*, another ancestral being, as being separate creatures (Mathews 1897a:3). During intertribal initiation ceremonies, the Darkinjung sculpted *Duramulan* in relief on the ground and carved him on trees (Mathews 1897a). *Baiyami* was also represented alongside *Duramulan* in the Darkinjung ceremonies (Mathews 1904).

The ancient pathways contain many layers of stories – they were physical, and they were spoken and sung too while travelling along the Songline routes. Cultural practice through songs, dance and story revitalised the land of ancestral spirit families, as the very sound of nature itself from the wind, rain, trees, water and all creatures is believed to strengthen the connection to be whole or as one with everything in life itself.

Movement across the Darkinjung landscape contains evidence of these events of these rituals and customs. We are always on Aboriginal land, still following some of these Songlines today, still moving resources, still meeting family and community and still doing business.

Totemship, a very important cultural Lore, is part of the family Kinship structure linking people to the lands or place in a spiritual and physical way. Totemship gives balance in life between human beings and our natural and ancestral world, which Traditional lore is very much based on. Totemship relates to everything that gives us life, from all creatures great and small, including the sky world.

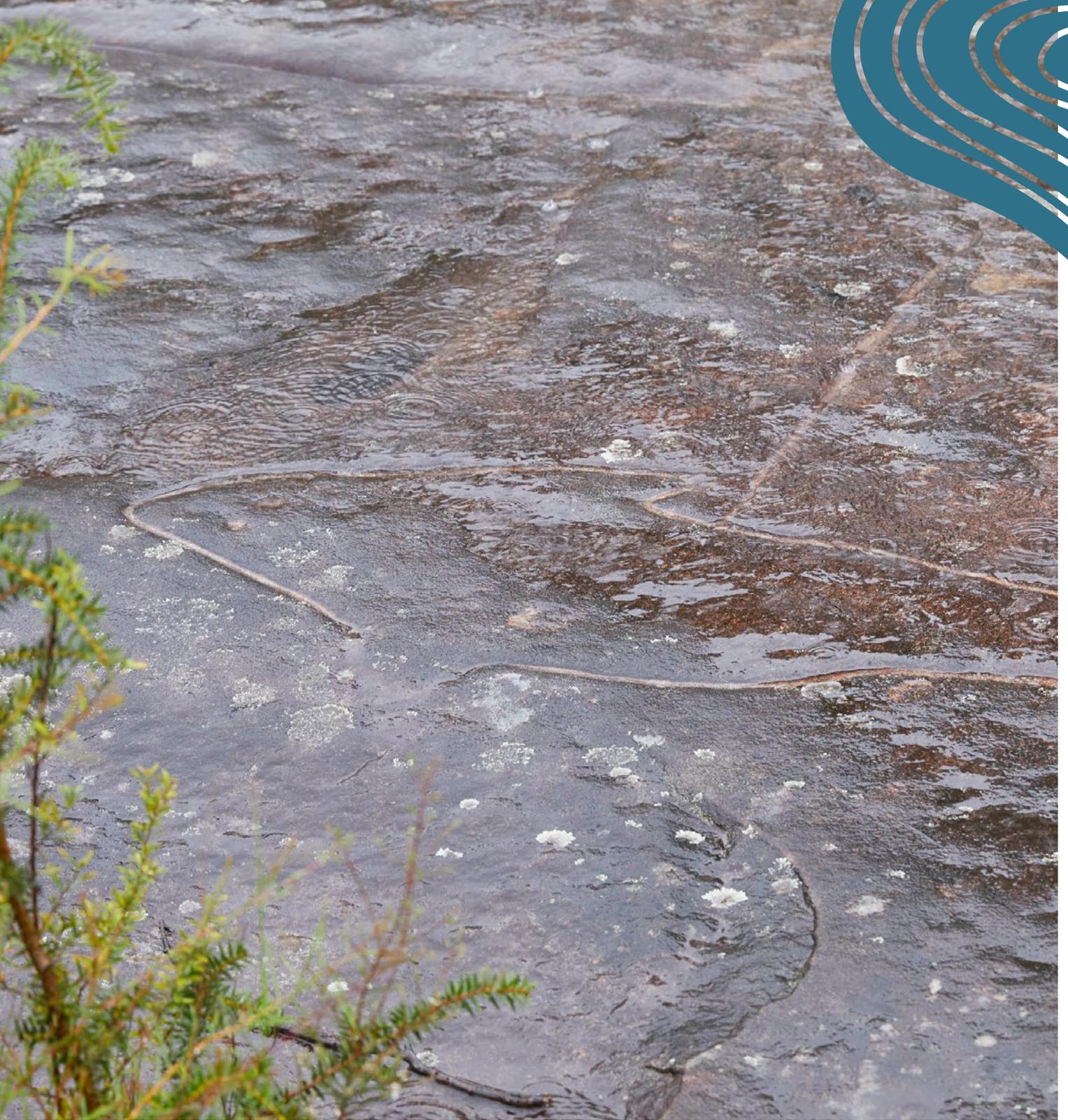
Darkinjung people have many totems of the land, one being the Humpback Whale as their significant ancestral creature. When a person is born, they are given a totem, which connects them spiritually and physically to their community and environment. Totems can be of plants or animals, called Ancestral beings. Skin Totems are based on Family Kinship lores and groups, giving Aboriginal people their responsibilities of taking care of country and creating a balance in nature itself.

Darkinjung Country has over 10,000 significant cultural sites from Rock art in caves to engravings on sandstone platforms, including stone arrangements. Celebrating and sharing this cultural knowledge and historical events strongly connects Darkinjung people with Country and provides a space to commitment to restorative protection and preservation that supports not only people of Country but country itself.

*The Central Coast Regional Transport Plan* is fundamental in supporting the NSW Government's Opportunity, Choice, Healing, Responsibility and Empowerment (OCHRE) commitment to provide opportunity, choice, healing, responsibility and empowerment for Aboriginal communities' and acknowledging their deep connection with Country. Ensuring Darkinjung heritage is reflected in planning, management and development and ensuring that the Darkinjung Aboriginal community have a genuine voice in self-determination and how their land is utilised and for what purpose is crucial.

The Government Architect NSW (GANSW) Connecting with Country approach and the Department of Planning and Environment's strategy, Our Place on Country give effect to statutory objectives that require Aboriginal culture and heritage to be sustainably managed in the built environment. The new planning regulations outline procedures to embed Aboriginal cultural knowledge within the Department of Planning and Environment and Department of Regional NSW. Highlighting how early engagement and working together to empower Aboriginal voices within decision-making will give Aboriginal people greater choice, access and control over land, water, housing and resources within the Central Coast.





Aboriginal people continue to maintain a strong sense of place and connection with Country and believe that if we care for Country, it will care for us. This requires Country to be planned for throughout the process of design and development while planning with Country as another important entity to be considered when designing plans that interact with Country, place and people.

Providing a space for genuine planning approaches for the Central Coast can build capacity and pathways for knowledge sharing between Aboriginal and non-Aboriginal communities, helping to connect people to Country and Country to people, bringing the whole of community along on the journey while integrating historical information for us all to travel safer and learn.

▲ Rock Engravings visible at the Brisbane Water National Park.  
© Yasmin Mund.



## 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 Plan and supporting analysis are based on the agreed Common Planning Assumptions as at April 2021. Details of the Common Planning Assumptions used are set out in the Common Planning Assumptions Book version 5.1.

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▲ Cover image:  
Hargraves Beach,  
Noraville.

▲ Woy Woy Cyclepath.



# Executive Summary

The Draft Central Coast Regional Plan 2041 is a supporting plan of **Future Transport 2056** and provides a blueprint for how Transport for NSW will address the key trends and transport needs of the Central Coast through to 2041.

The Plan presents a transport vision for the Central Coast, coordinating the key infrastructure, services and policy interventions to achieve the vision at a regional level. Key goals of the vision include:

- Proportionally more people (than today) living in the Central Coast walk, cycle and use public transport
- More travel choices supporting vibrant and accessible centres to live, work and visit
- Improved multimodal connectivity between the Central Coast, the Hunter, and Greater Sydney
- Improved intra-regional connectivity to support the strategic centres and significant growth areas within the Central Coast
- Greater use of technology to support a safer, more efficient, and accessible transport network
- Reduced crash rates in-line with the 'Towards Zero' goal of zero fatalities and serious injuries on roads by 2056

The Central Coast is located approximately halfway between both Sydney and Newcastle, and Brisbane and Melbourne, and will have experienced a population increase of over 70,000 people by 2041.

The continued influence of Greater Sydney and Greater Newcastle, and the popularity of the Central Coast as a tourist destination, together with growth trends in population and expanding employment areas within the Central Coast will need to

▲  
The Entrance,  
on NSW's  
Central coast.

be supported by a safe, sustainable and resilient multimodal transport network that connects residents and workers of the Central Coast, enabling their productivity and supporting a thriving liveable region. The transport system will also need to support NSW Government's goal to reach net-zero emissions by 2050.

To achieve this, Transport has identified 16 objectives and 80 supporting initiatives that will support this 2041 vision for the Central Coast. These initiatives can be broadly categorised as:

- Improving bus services by implementing a rapid bus solution, integrating service planning with new housing release areas, trialling on-demand services and improving the integration of bus and rail transport modes
- Improving local connectivity for walking and cycling by addressing missing footpath and cycleway links, providing and advocating for bicycle storage at train stations and key destinations, and reviewing speed zones within town centres
- Improving connectivity by rail by delivering the Mariyung Fleet, developing the Fast Rail Strategy and improving the integration of bus, car and bicycle with the rail transport mode
- Improving waterways to be safe and accessible by exploring ferry service opportunities, investing in maritime infrastructure, balancing access between recreation and commercial needs and delivering awareness and education programs
- Improving reliability, resilience and safety of the road network by continuing to invest in road projects in key corridors such as the M1 Pacific Motorway and Central Coast Highway, exploring potential corridors such as the Outer Sydney Orbital 3 and addressing localised crash clusters and traffic pinch points
- Improving safety across the Central Coast by implementing the Safe System approach, addressing localised clusters, delivering educational and behavioural campaigns, improving maritime infrastructure and using technology to minimise the impact of human error
- Improving the liveability of the Central Coast through coordinated land-use and transport planning, improving local place outcomes, reducing transport disadvantage and improving access to travel information
- Respecting the Central Coast's Aboriginal heritage by partnering with the Darkinjung LALC, using Aboriginal language, integrating Aboriginal stories in transport options, reducing transport disadvantage and delivering safety programs where Aboriginal people are overrepresented
- Supporting a low emissions future by increasing the number of walking, cycling and public transport trips, developing electric vehicle charging infrastructure, transitioning fleet to electric vehicles and implementing hydrogen fuel cell technology
- Supporting the productivity and freight functions of the Central Coast by continuing to improve key roads in the region, protecting key corridors for future freight productivity, improving rail freight and addressing first and last mile barriers
- Support the productivity of the health, education and tourist sectors in the Central Coast by providing multimodal options to these precincts and by exploring policy to support new ways of working and the rise of the 24-hour economy
- Improving the resilience of the transport network by investing in providing alternative routes within the Central Coast and by using technology to increase the ability to monitor, communicate and respond to network disruptions



This Plan seeks to make walking, cycling and public transport an attractive alternative to the private vehicle

## What does this Plan do?

A supporting plan of **Future Transport 2056**, the Draft Central Coast Regional Transport Plan 2041 (“the Plan”) provides a blueprint for transforming the way people and goods travel to, from, and through the Central Coast over the next 20 years.

Developed in concurrently with the Department of Planning and Environment’s (DPE) Draft Central Coast Regional Plan 2041, the Plan presents the strategic framework for how Transport will proactively respond to anticipated changes in land use, population, and travel demand across the region.

The Plan also seeks to make walking, cycling and public transport an attractive alternative to the private vehicle for more people across the Central Coast regardless of age, ability, and income. It also identifies a number of treatments to deliver a safer, more efficient, and more accessible network to better support the continued growth and financial viability of local communities, businesses, and industries that rely on transport to connect.

The Plan also seeks to balance the need to facilitate movement while supporting successful places.

Furthermore, the Plan highlights the necessary transport infrastructure, services and policy interventions required to support the successful transition to a low carbon future. This is in alignment with the NSW Government's Net Zero Plan Stage 1: 2020-2030 – the foundation for NSW's action on climate change and goal to reach net-zero emissions by 2050. These initiatives also align with the State's longer-term commitment to Towards Zero trauma across the transport network by 2056 - an aspirational target of zero transport-related injuries.

## How to read this plan

This Plan is vision-led and links regional challenges and opportunities through to initiatives needed to address them. This link is shown in Figure 1. The Vision, Themes, Objectives and Responses have been drafted to ensure that the Plan has the flexibility to adapt to the challenges as they change over time, while remaining consistent with the ultimate vision.

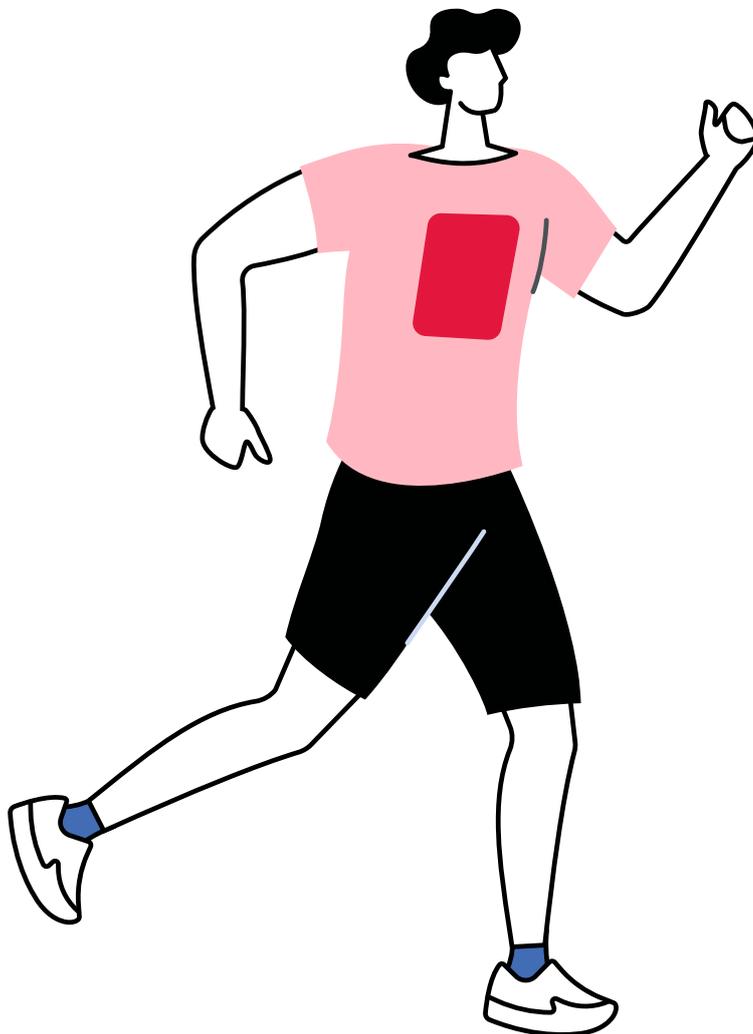
The 80 initiatives include staged infrastructure commitments, upgrades, service, technology, and policy initiatives as a key focus in the first ten years of the Plan. The initiatives are the stepping stones to achieving the transport vision for the Central Coast, and will be validated through Transport's investigation and prioritisation processes.

## Stakeholder engagement

The development of this Plan has been guided by formal engagement and workshops with key stakeholders to inform the transport vision, as well as identify key priorities for transport in the Central Coast.

Stakeholders engaged during the development of this Plan included representatives from Central Coast Council, DPE, the Department of Regional NSW and Darkinjung Local Aboriginal Land Council.

Stakeholder engagement will continue during implementation of the initiatives and ongoing monitoring and review of the Plan.



## Implementation, reporting and governance

Transport is responsible for the implementation and ongoing management of the Plan. Collaborative partnerships will be established with key Government agencies, Local Government and industry to deliver on the plan. Transport will actively participate in the Central Coast Urban Development Program and Place Delivery Groups.

Initiatives identified for investigation, require further analysis in collaboration with key stakeholders to determine feasibility.

This Plan assumes initiatives and priorities will be scoped and funded through the standard business case and program delivery processes.

The Plan will be reviewed to reflect the changing region. Transport will report annually on initiative status and achievement against outcomes with a comprehensive review every five years.



Figure 1: Initiatives steps







Both older and younger groups tend to make more discretionary trips at times that aren't work-related

## The Transport Challenge

This Plan articulates how Transport intends to respond to the following five trends that will shape the transport needs of the Central Coast over the next 20 years.

### A growing and changing population

The Central Coast is located at the centre of NSW's fastest growing corridor, Sydney to Newcastle. Known for its pristine beaches, numerous waterways, national parks, lush hinterland and rich cultural heritage, the Central Coast is an attractive place to live, work and play.

The region's rural and coastal lifestyle choices, smaller community feel, natural beauty, and diverse economy also make the region liveable and an attractive place to raise a family, retire or semi-retire and this will continue to drive growth. However, the Central Coast is also home to areas of significant socio-economic disadvantage, and areas of mortgage

▲ Older and younger bus customers.

and rental stress, with low individual and household incomes compared to Greater Sydney.

Country to the Darkinjung peoples, the Central Coast region comprises the full Central Coast Local Government Area (LGA) and is currently home to about 360,000<sup>1</sup> people, making the LGA the third most populous in NSW. By 2041, the region’s population is expected to increase by approximately 21 per cent to 432,000 people, a growth rate about double that for the whole of regional NSW and just short of the 25 per cent seen for the whole of NSW including Greater Sydney see Figure 2.

In line with trends seen across regional NSW, the average age of the region’s population is expected to increase over the next 20 years, with the proportion of people aged over 65 years expected to increase from 22 per cent in 2021, to 26 per cent by 2041. During this same period, the proportion of residents aged between 20 and 65 years is projected to decline, with those aged under 20 years expected to remain relatively stable overall. This means is a decline in the working age population, and an increase in the proportion of residents who have different mobility needs, demands, abilities and behaviours.

Both older and younger groups tend to make more discretionary trips at times that aren’t work-related, and there are fewer driver licenses held and cars owned by these groups. Importantly, seniors housing choices are often dictated by ease of access to essential services by public transport. This changing customer demographic will need access to flexible and integrated transport networks that connects them with the places they need to get to for work, education, services, and leisure.

The region has a large Aboriginal and Torres Strait Islander population, with approximately four per cent of the population identifying as Aboriginal and/or Torres Strait Islander, compared to three per cent across NSW. The proportion of Aboriginal and Torres Strait Islanders in the Central Coast is generally larger in the northern (Wyang SA3) part of the region.

Continued advances in technology are also expected to influence the region’s demographics, with the rise of flexible working removing or lowering the barrier for some to live and work in places like the Central Coast. Renewed societal interest in having easy access to enjoyable public spaces and natural environments has also increased interest in living in non-metro areas that can offer more natural amenity.

In combination, the anticipated population growth and the changing demographics of the region’s population will necessitate a tailored transport response for the Central Coast that will satisfy the needs of Transport’s customers both now and into the future.

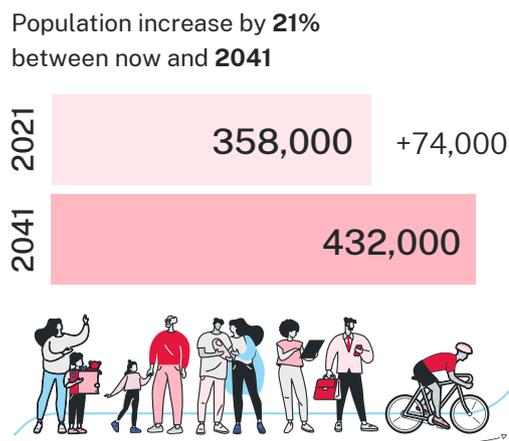


Figure 2: Projected population growth between 2021 and 2041.

<sup>1</sup> 2021 Department of Planning and Environment

	2021	2041	
0-19	24% 86,000	22% 95,000	↘
20-24	54% 194,000	51% 220,000	↘
65+	22% 78,000	27% 117,000	↗

Figure 3: Projected demographic change between 2021 and 2041

## Support growing districts and expanding employment precincts

The Central Coast's economic strengths lie in its skilled workforce, proximity to Sydney and Newcastle, growing population, natural environment and resources. The region has an estimated 135,000 local jobs and this number is projected to increase by 22,000 jobs by 2041. Employment is concentrated in areas with infrastructure that has the capacity to support future growth, potentially above current projections.

The region has a strong economy with sector expertise in healthcare and social assistance, food manufacturing, tourism, logistics, agriculture, education and construction. The Central Coast has limited job opportunities outside of these sectors and is reliant on Sydney and Newcastle for employment. The Central Coast's convenient access to these major markets and a growing local workforce should be supported by enabling job growth within the region for both business and industry.

There are economic opportunities to leverage business investment and jobs from major public infrastructure

investments, such as the Gosford Hospital and Wyong Hospital redevelopments, improved access to the proposed Gosford city revitalisation and upgrades to the Pacific and Central Coast highways.

Growing population areas within the Central Coast including the northern suburbs and other centres such as Gosford, Tuggerah, and Karagi will need to be supported by public transport options, while areas of industrial growth such as Warnervale and Somersby will need to be supported by employment and infrastructure for freight, supporting access to local and international markets. Employment and infrastructure for freight connecting these areas and their access to local and international markets will support growth and investment.

Improving access to and the number of quality local jobs encourages local residents to work within the region, rather than commuting out of it. Providing and promoting additional multimodal transport choices will be necessary to support local employment opportunities in the Central Coast corridors into the future, and in particular, to support day-to-day activities, industry, employment, and education in these growing areas.

The four districts of the Central Coast, identified in the DPE Draft Regional Plan as Narara, Tuggerah, Central Lakes,<sup>2</sup> and Watagan, are based around key centres and corridors within the region (see Figure 4). As these centres grow, they will become more important for surrounding communities within each district seeking to access essential services. The DPE Draft Regional Plan also identifies the regionally significant growth areas of Gosford, Tuggerah, Karagi, Somersby, Warnervale and the Central Coast Plateau.

<sup>2</sup> This sub-region straddles the boundary of the Central Coast region and Hunter region, where Morisset is located.

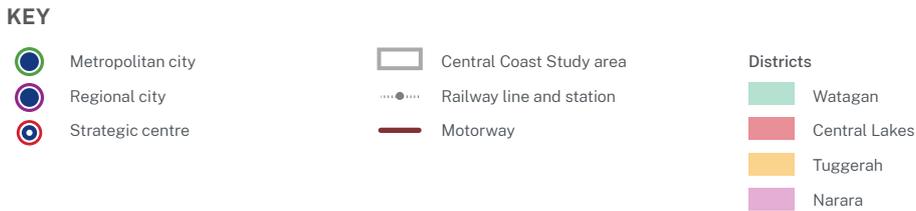


Figure 4: Districts of the Central Coast Region (DPE, 2021)

Providing accessible transport options, regardless of age, ability or income will continue to be a challenge into the future. Supporting the safe and efficient movement of freight and its important contribution to the growth of the region will also be a priority.

## The constraints of a unique geography

The Central Coast is heavily constrained by lakes, waterways, hills and environmental lands. These geographic and environmental constraints have created peninsulas of dispersed urban areas between constrained lands that have long single routes in and out and are often constrained by the topography of the area. Additionally, a strong focus of travel within the Central Coast is not just north-south, but also east-west due to the dispersed settlement patterns. The routes in and out of the many peninsulas are typically close to capacity which make the bus network unreliable due to congestion in peak times.

These constraints are a significant contributing factor to the existing mode share patterns in the Central Coast. Transport recognises these geographic challenges will continue to shape the form of land use and transport in the Central Coast.

## Influence of Hunter, Greater Sydney, and beyond

The Central Coast is located on the NSW coast between the major urban centres of Sydney and Newcastle. The region is approximately an hour from both Sydney and Newcastle, with access north and south via the Main North railway line and the main north-south highway linking Sydney, Newcastle and Brisbane M1 Pacific Motorway. The Future Transport Regional NSW Services and Infrastructure Plan

identifies that Gosford will emerge as a key Satellite City and part of the Greater Sydney urban area by 2056.

The Central Coast is also located less than one day's drive from both Melbourne and Brisbane, making the region accessible to millions of people.

The accessibility of the area benefits the community of the Central Coast, providing access for residents and businesses to the social and business infrastructure associated with major cities. It is also an important attribute in relation to tourism.

The Central Coast will evolve with strengthened linkages to jobs and services within Greater Sydney due to its proximity and improved road and rail connections.

Additionally, as Greater Newcastle grows and develops as a key global gateway city, the connections between the Central Coast and Greater Newcastle will be enhanced through improved transport services and infrastructure.

Currently, more than a quarter of the working population leave the area for work, the majority of which travel to Greater Sydney via the M1 Pacific Motorway or the Main North railway line. Private ferries also play a minor role in connecting the Central Coast at Ettalong to Sydney at Palm Beach. The future transport system for the Central Coast will need to support both its growing and changing population and the need for connections to surrounding regions.

Transport is committed to improving the accessibility of the Central Coast to Greater Sydney and Newcastle by public transport and private vehicle. Transport is currently developing the Fast Rail Network Strategy for NSW. This could significantly improve connectivity within the region and between Newcastle and Greater Sydney with the potential to deliver travel time



savings of 30 to 60 minutes between Gosford and Sydney.<sup>3</sup> The strategy will present a blueprint for how Fast Rail could be delivered and includes the potential northern corridor from Sydney to Newcastle and beyond to Port Macquarie.

Investigations of further links to Greater Sydney such as the Outer Sydney Orbital Stage 3 will strengthen connectivity and access between the Central Coast to and from Greater Sydney. The continual improvement of the Pacific Highway will further strengthen the north-south spine through the region and enable improved connectivity between the Central Coast and key destinations beyond the region including Sydney, Newcastle and Brisbane.

## A destination of choice for tourists

COVID-19 has positively affected the visitor economies of regional NSW by encouraging Sydneysiders and NSW residents to explore their own backyard. Offering the safety of its wide-open spaces and uncrowded towns with distinctive local charm, regional NSW is well placed to take advantage of this unprecedented situation.

In NSW, the visitor economy supports more than 107,115 businesses and over 296,000 jobs. It is the State's fifth-largest employment group, accounting for approximately seven per cent of total jobs. In 2018/19, the visitor economy contributed \$38 billion (six per cent) of NSW Gross State Product.<sup>4</sup>

▲ Spectacular sunrise at Avoca Beach.  
© Destination NSW.

<sup>3</sup> 30 minutes between Gosford and Sydney is High speed rail >250kph; 60 minutes is Faster Rail <200kph. [nsw.gov.au/a-fast-rail-future-for-nsw](https://nsw.gov.au/a-fast-rail-future-for-nsw)

<sup>4</sup> NSW Government's Visitor Economy Strategy 2030 provides a roadmap to support all industries involved in the visitor economy to recover from the impact of drought, bushfires and COVID-19 and to grow in the future.



▲ Somersby Falls.

The Central Coast is known for its lakes, rivers, beaches and lush countryside where visitors can go bushwalking, surfing, fishing, sailing, and whale-watching. The region's proximity to Sydney and Newcastle via both road and rail, and its diverse natural amenity, lends itself to capitalising on both domestic and international tourism.<sup>5</sup>

To effectively capitalise on this, transport in the Central Coast will need to be reliable, integrated, and operate in a way that can adapt to peak holiday and event periods while encouraging visitors to arrive by rail and bus where possible, mitigating the congestion impacts to roads.

COVID-19 and its associated mobility restrictions have impacted on the visitor economy of the Central Coast Region. The total number of domestic and international visitors in 2020 was 4.8 million, down 32 percent (from 2019),

and expenditure down by over 20 per cent at \$900 million. Nearly one third of this expenditure came from day trip travellers, reflecting the region's proximity to the populations in Sydney and Newcastle. Most of these travellers arrived via private vehicle (95 per cent<sup>6</sup>) adding to road congestion, presenting an opportunity for mode shift and travel behaviour change into the future.

Over the next 20 years, the Central Coast will continue to be a popular destination for visitors. The growing tourism sector will be supported through road upgrades, improved bus and rail services, and walking and cycling connections providing safe and reliable access throughout the region.

<sup>5</sup> Beyond border restrictions imposed by the Federal Government during the COVID-19 global pandemic.

<sup>6</sup> [destinationnsw.com.au/wp-content/uploads/2021/05/central-coast-visitor-profile-ye-dec-2020.pdf](https://destinationnsw.com.au/wp-content/uploads/2021/05/central-coast-visitor-profile-ye-dec-2020.pdf)

## A Low emissions future

The impacts of climate change are becoming increasingly evident in the frequency and magnitude of extreme weather events and natural disasters. Higher temperatures and major intense storm and rainfall events place considerable strain on the transport network, impacting operational reliability and customer safety, as well as long-term asset resilience.

In 2017, the transport sector was the second largest contributor to greenhouse gas emissions in NSW.<sup>7</sup> Transport supports the NSW Government's goal to reach net-zero emissions by 2050 and acknowledges that the transport sector will need to play a key role in the transition towards a low emissions future.

Transport is introducing Zero Emissions Buses (ZEB) over the next decade. The transition of the NSW bus fleet to ZEBs, powered by renewable energy, is a key initiative to support the NSW Government's net-zero commitments. A full ZEB fleet, powered by renewable energy, could reduce Transport's emissions by around 46 per cent, generating environmental and health benefits of \$1 to 2 billion over 30 years, compared to diesel buses and support the delivery of net zero transport.<sup>8</sup>

The NSW Government's Electric Vehicle (EV) Strategy will provide tax cuts and incentives to increase the uptake of electric vehicle purchases for residents and businesses. EVs produce no tailpipe emissions and provide health benefits through lower air pollution. The EV strategy also includes the transition of the NSW Government passenger fleet to EVs

by 2030, and investment of \$171 million to build a road network of ultra-fast charging stations.

The NSW Government has committed \$70 million to the development of a hydrogen hub in the adjacent Hunter Region. Hydrogen hubs will help enable the uptake of hydrogen use for transport applications, such as hydrogen buses. The NSW Government is also actively investigating how the deployment of hydrogen buses, as part of the net-zero fleet transition, can support hydrogen hub development, with small scale trials already underway on the Central Coast.<sup>9</sup>

The NSW Government is also in the early stages of planning for a Renewable Energy Zone (REZ) in the Central Coast-Hunter Region. REZs are modern-day power stations. They combine renewable energy generation such as wind and solar, storage such as batteries, and high-voltage poles and wires to deliver energy to the homes, businesses and industries that need it.

There is a need to shift demand to more sustainable options through integrated land use planning, lowering vehicle emissions through the increased use of electric and hybrid vehicles, and the transition towards renewable and sustainably generated energy sources.

<sup>7</sup> Net Zero Plan Stage 1: 2020-2030, NSW Government, March 2020, p. 11

<sup>8</sup> Zero Emission Bus Transition Strategy, Transport for NSW, 2021

<sup>9</sup> Draft NSW Hydrogen Strategy 2021

## Why not business as usual?

The majority of people travel to places of work within the Central Coast, equating to about 69 per cent of residents who commuted to work in 2016.<sup>10</sup> The remainder mainly travel to areas of Greater Sydney, but a small proportion work in the adjacent Lake Macquarie and Newcastle areas.

As shown in **Figure 6**, private vehicle is the most popular mode of transport across the region, accounting for 81 per cent of all trips. This is caused by cars providing a more flexible and comfortable option than public transport services that can be hard to access or are unreliable due to congestion.

Currently, 18 per cent of all trips are taken by public or active transport. Increasing this share by just five per cent could take 60,000 cars off the road during an average weekday.

As key centres such as Gosford, Wyong, and Tuggerah grow and the population changes, alternative choices for local trips will become increasingly important, particularly as many older and younger people are unable to drive or may not have access to a private vehicle. With the Central Coast experiencing an ageing population, multimodal travel options will help to support older people enjoy a liveable, accessible region.

Working with Council, Transport will focus on connections and access to, from, and within towns and centres by walking, cycling, rail, local bus and point-to-point transport. Additionally, Transport will continue to invest in road upgrades which will support rapid transit opportunities and general bus travel time reliability.

### Place of Work

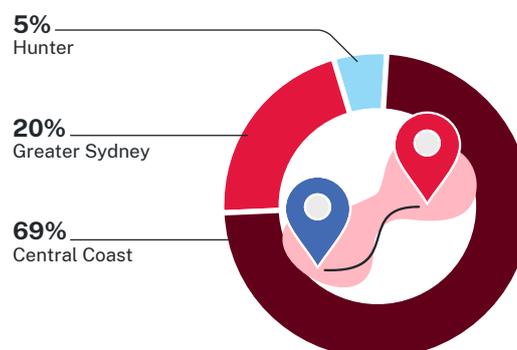


Figure 5: 2016 'Place of Work' for the Central Coast  
Source: 2016 Census, Australian Bureau of Statistics

### Mode Share

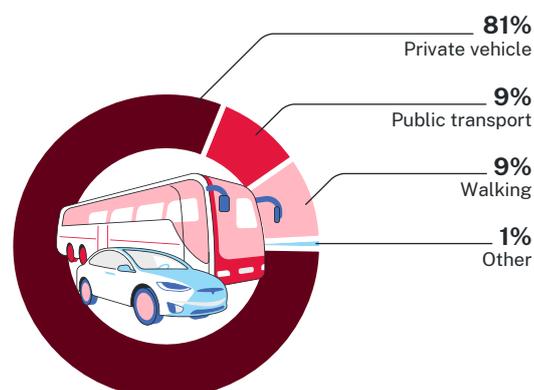


Figure 6: 2019/20 'Mode Share' for the Central Coast  
Source: 2019/20 Household Travel Survey, Transport for NSW

<sup>10</sup> ABS, Census 2016 Method of Travel to Work data



With the release of the NSW Government's Net Zero Plan Stage 1: 2020-2030, there is a pressing need for the transport sector to embrace low emission technologies, initiatives and interventions, and support the successful transition to net zero emissions by 2050.

The continued evolution of technology will also have the potential to change the nature of freight in the Central Coast. Technological changes, more efficient heavy vehicles and new vehicle fleets all have the ability to improve freight capacity, safety and reliability.

To achieve a more sustainable, multimodal and safe transport network for the Central Coast, this Plan adopted a "vision and validate" approach. This approach proactively responds to anticipated changes in land use, population and travel demand, and

facilitate improved travel choices for more people regardless of age, ability and income.

This approach recognises that continuing to accept current travel behaviours, in particular high levels of private car use, is ultimately unsustainable and unlikely to achieve the regional transport vision. The approach assumes that existing behaviours and trends can, and will change over time, and therefore should not dictate future need.

Based on this approach, this Plan identifies the infrastructure, services, technology and policy mechanisms required to achieve the vision, while responding to the anticipated future growth in population, travel demand and changing land use patterns.

▲  
Norah Head  
lighthouse.



Transport and land use will be integrated and reflect balanced Movement and Place outcomes

## The Transport Opportunity

Enabling great places and lifestyles in the Central Coast Region with sustainable, safe and integrated transport solutions and strengthening connections to its strategic centres, centres of local significance and the connections beyond the region.

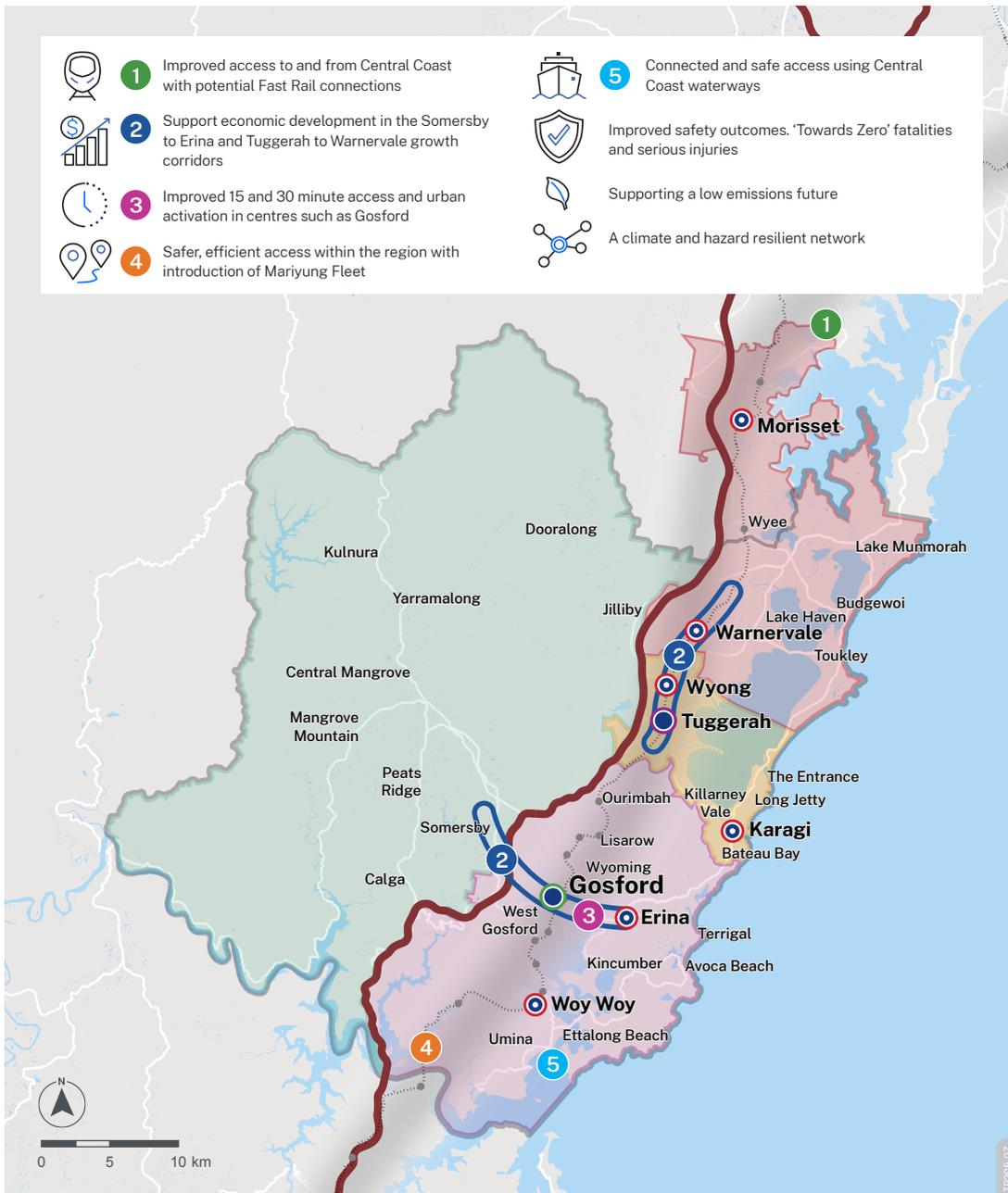
Between now and 2041, the Central Coast will undoubtedly continue to change and grow in its character. This transport vision will ensure the Central Coast continues to be well-connected by a safe, efficient, sustainable, reliable and accessible network of integrated transport services and infrastructure.

Better integration between land use and transport planning will see more of the population within 30 minutes' travel to jobs, education, hospitals, and retail throughout the Central Coast and within 15 minutes' travel to neighbourhood businesses such as cafes, supermarkets and community facilities.

Transport and land use will be integrated and reflect balanced Movement and Place outcomes, contributing to better places and improving public transport attractiveness.

Economic development in the Somersby to Erina, and Tuggerah to Warnervale growth corridors will be supported by improved regional and local access which will also facilitate tourism across the region, taking advantage of the Central Coast's unique and productive natural environment.

▲ An aerial view of Gosford.



**KEY**

- |                   |                           |                  |
|-------------------|---------------------------|------------------|
| Metropolitan city | Central Coast Study area  | <b>Districts</b> |
| Regional city     | Railway line and station  | Watagan          |
| Strategic centre  | Motorway                  | Central Lakes    |
|                   | Potential Fast Rail route | Tuggerah         |
|                   |                           | Narara           |

Figure 7: Map of the transport vision

Residents and visitors will take advantage of improved multimodal connectivity between the Central Coast and the Global Gateways of Newcastle, and Greater Sydney. The introduction of the Mariyung

Fleet services will make travel through the region more comfortable, accessible and reliable, complemented further by potential Fast Rail and Outer Sydney Orbital connections in the future.

The Central Coast will offer improved travel choices with on-demand transport, point-to-point services and the evolving micro-mobility transport sector, complementing traditional, timetabled public transport services providing customers with more travel choices and at times of their choosing.

The region's productivity will be supported through enhanced networks supporting efficient movement of freight through, to, and from the region, with first and last mile solutions tailored to support successful places.

Innovation and advances in technology will continue to deliver improved customer outcomes by enabling new and more personalised mobility solutions, the wider distribution of "real-time" information to support informed decision-making, improved safety, and greater network resilience and freight efficiencies.

Through the Central Coast-Hunter Renewable Energy Zone (REZ), the region will be well on the way to achieving a low emissions future. Public transport services will be both cleaner and more accessible, and the introduction of electric vehicles will be supported by a comprehensive, local fast charging network underpinning the electric evolution of the vehicle fleet.

There will be a continued focus on improving safety outcomes in line with the "Towards Zero" goal of zero fatalities and serious injuries on roads by 2056, which will deliver a safer transport environment for all users across the Central Coast.

Finally, climate and hazard resilience will be built into network infrastructure supported by adaptive management strategies that maintain emergency access along routes and bring the network back on-line quickly following planned and unplanned disruption.

## Achieving the Vision

The transport vision for the Central Coast will be achieved through the implementation of 16 key objectives and 80 supporting initiatives. The objectives are categorised under six broad themes - Connected, Safe, Liveable, Sustainable, Productive and Resilient.

The themes, objectives and initiatives combine to articulate the realisation of the vision at a local level, as well as address the unique transport characteristics of the Central Coast.

**The transport vision for the Central Coast will be achieved through the implementation of 16 key objectives and 80 supporting initiatives**

### Creating a network that is



**Connected**

A transport network that facilitates seamless, multi-modal connectivity between where people live, work and play



**Safe**

A transport network that delivers a safer future for the Central Coast



**Liveable**

A transport network that supports places while enabling the successful movement of people to access jobs, services and social opportunities regardless of age, ability and income



**Sustainable**

A transport network that both contributes to, and supports, a seamless transition to a low emissions future



**Productive**

A transport network that supports the efficient and safe movement of people and goods to support economic growth for the Central Coast



**Resilient**

A transport network that is resilient to major disruptions associated with natural disasters, climate change and planned and unplanned events

## Connected

### A transport network that facilitates seamless, multimodal connectivity between where people live, work and play

Transport plays a vital part in the lives of its customers, whether at work or at play, across their entire lifespan. Transport will deliver and enable transport solutions that blend seamlessly into its customers' lifestyles, catering for the wide range of journey types needed by people and for the movement of freight.

An expanded public transport catchment for Gosford, improved access within sub-regions and centres, and improved multimodal connectivity beyond the region, is key to delivering a transport network that facilitates greater modal choice, and enables people to successfully access jobs, services and social opportunities regardless of their age and ability.

### Objective 1 – Expand the 30-minute public transport catchment of Gosford, the Region's Capital.

Gosford has been identified in DPE's Draft Regional Plan 2041 as a Metropolitan City. The Regional NSW Services and Infrastructure Plan identifies the need to focus development of the 30-minute public transport catchments around Cities. Improving 30 minute access to Gosford will help sustain and enhance the liveability, productivity and sustainability of the Central Coast, providing customers with more time for other activities.

To achieve this objective, Transport will:

- Invest in efficient modes of transport such as public transport
- Investigate opportunities to improve bus services
- Improve integration of transport modes

It is vital that Transport works collaboratively with DPE to ensure that land use plans and transport networks are developed in tandem, safeguarding the sustainable and serviceable growth of housing and jobs.

This Plan nominates the following objectives to help improve connectivity across the Central Coast.

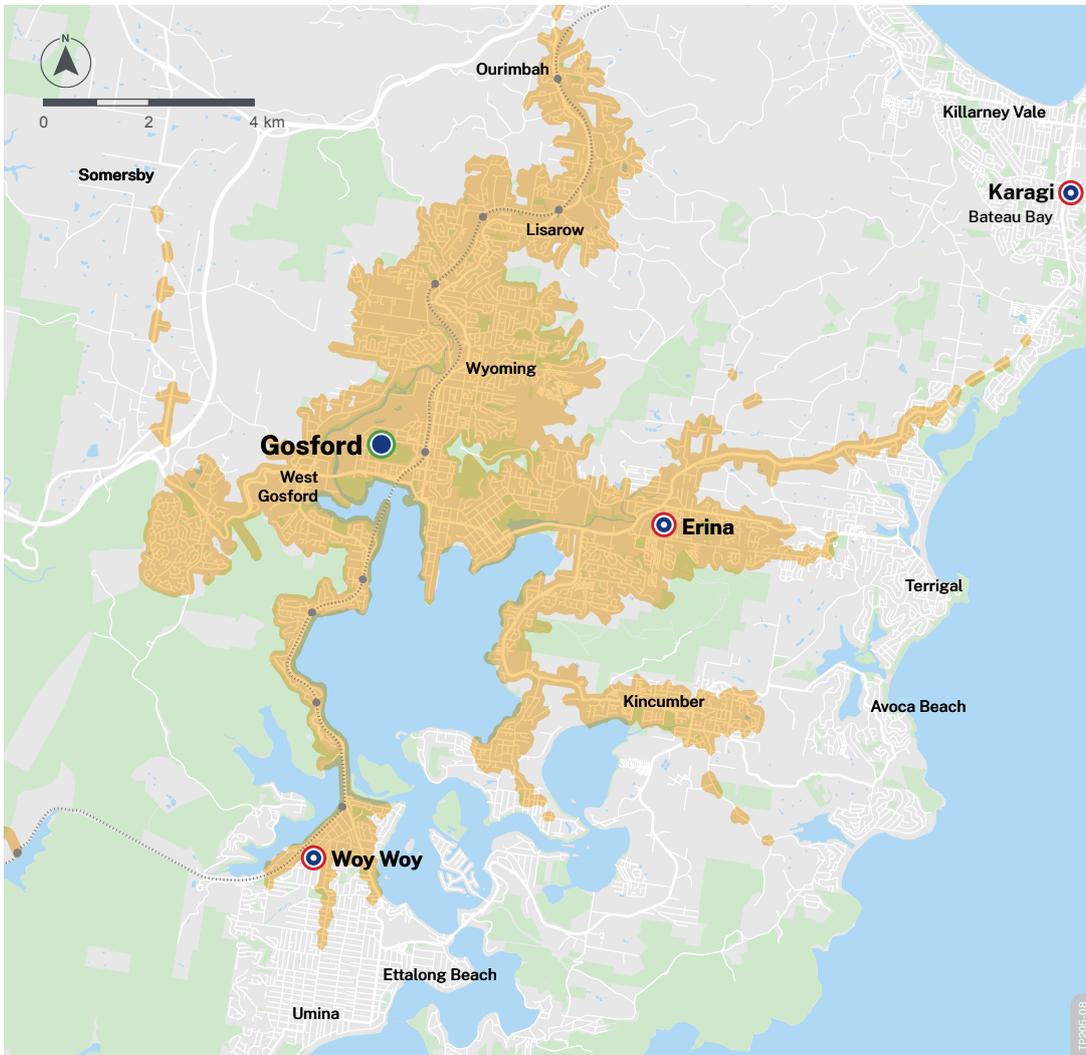
**Objective 1** – Expand the 30-minute public transport catchment of Gosford, the region's capital.

**Objective 2** – Support and improve local connectivity within and between the region's strategic centres.

**Objective 3** – Provide efficient, reliable, comfortable and safe connectivity between Central Coast, Greater Sydney, and Newcastle.

### Invest in efficient modes of transport such as public transport

The 30-minute city will require more efficient modes of transport – public transport, shared transport and walking and cycling – to play a greater role. As the Central Coast develops, the public transport corridors that serve Gosford will facilitate economic growth by enabling 30-minute access for the surrounding population. This will improve integration and safe interchange between modes and services.



▲ Train crossing Railway Bridge over the Hawkesbury River near Dangar Island, NSW.

**KEY**

- Metropolitan city
- Strategic centre
- Railway line and station
- Travel time catchment  
30 minutes

Figure 8: 30 minute catchments of Gosford

Over the next 20 years, Transport is committed to improving public transport journey times, frequencies and service catchments across the Central Coast to ensure public transport becomes a viable option for more areas, an attractive alternative to a car.

### **Investigate opportunities to improve bus services**

Transport is planning a rapid bus solution for the Central Coast to enhance the attractiveness of public transport as a mode of choice by improving reliability, speed, priority and coverage of the bus network. The rapid services would seek to reduce travel times on key feeder routes, and be supplemented with bus priority measures to improve reliability.

## **Objective 2 – Support and improve local connectivity between and within the region’s strategic centres**

Beyond Gosford, the other strategic centres identified in DPE’s Draft Central Coast Regional Plan 2041 are Woy Woy, Erina, Karagi, Tuggerah, Wyong, and Warnervale. It is important that local connectivity within and between these centres is competitive and comfortable, supporting the attractiveness and liveability of the Central Coast. Key to this is making walking, cycling, and public transport attractive options for more trips, more often. Greater modal choice will ensure the transport network better suits the changing needs of the population throughout all stages of life.

Over the next 20 years, Transport is committed to improving local connectivity between and within the region’s strategic centres by improving the comfort and ease of walking, cycling and public transport.

Potential routes could include Terrigal to Gosford via Erina, and Charmhaven to Tuggerah via Kanwal. Transport will also continue to seek to improve the efficiency of commuter routes and schedules.

### **Improve integration of transport modes**

Transport will also investigate opportunities to improve existing bus services and their integration with the rail network to bring more people within 30 minutes of where they need to be to live, work, study and play.

To accompany this, Transport will also investigate the development of an integrated transport network for the Central Coast which will improve integration and interchange between modes and services to enable a seamless customer experience.

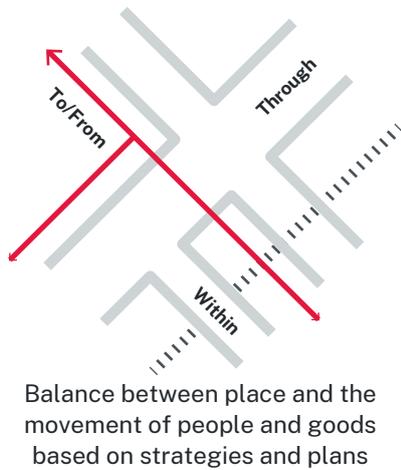
Transport will:

- Enable high quality, connected walking and cycling infrastructure within local centres
- Invest in providing improved bus options for residents of the Central Coast
- Investigate on-demand services to expand service areas
- Invest in connecting the waterways of the Central Coast

### **Enable high quality, connected walking and cycling infrastructure within local centres**

Transport published its Road User Space Allocation Policy in 2021 which prioritises consideration of active and public transport (and freight) ahead of private cars helps us achieve more balanced local multimodal connectivity outcomes for centres into the future.

**1 Establishing primary road function**



**2 Order of road user space considerations**

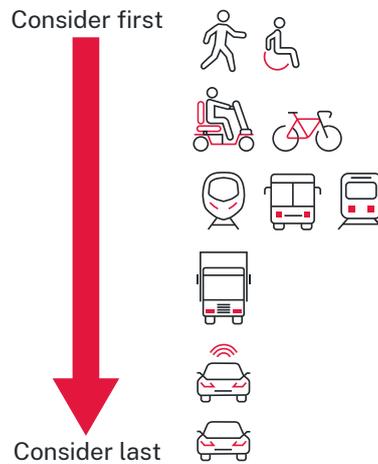


Figure 9: Road user space allocation

Through the NSW Government’s Walking and Cycling Program, Transport will work collaboratively with local government to address barriers to walking and cycling across the transport network and make active transport a more convenient option for short trips.

Transport will encourage Central Coast Council to require new developments to include the provision of active and public transport infrastructure. This includes road infrastructure, cycleways, shared paths, footpaths, secure bicycle parking, end-of-trip facilities and tree planting to support the shift towards more sustainable travel behaviours.

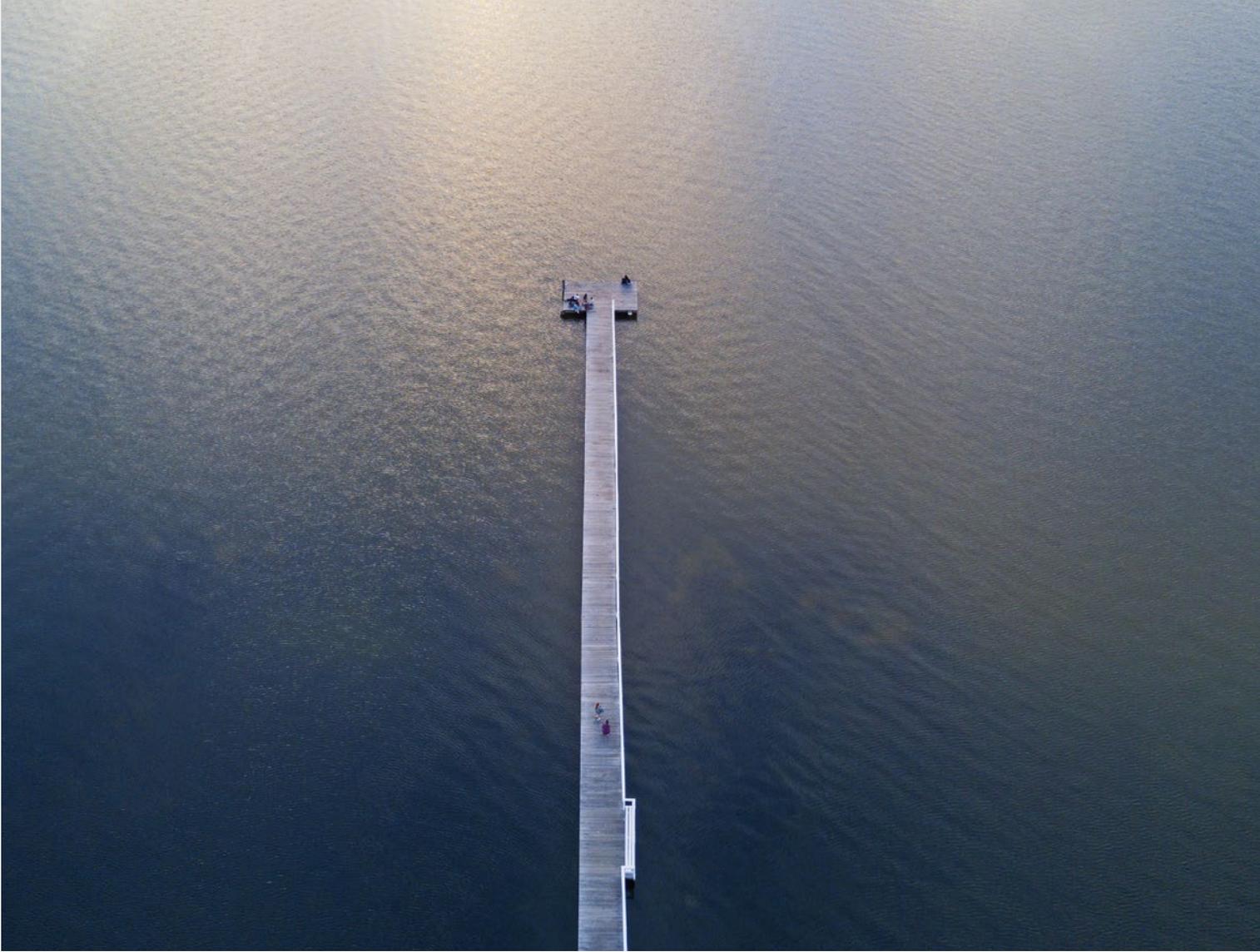
Expanding the active transport networks in regional centres will support travel for short trips within town. Bicycle networks in regional centres often have gaps in infrastructure, presenting safety risks when cycling with vehicle traffic, particularly in centres where major highways and rail corridors cause severance. Transport will work with Central Coast Council to develop a connected cycleway network for the Central Coast to ensure more seamless bike rider journeys.

Transport is also committed to reviewing approval and funding frameworks to better enable improved cycling and micro-mobility experiences for the community.

**Invest in providing improved bus options for residents of the Central Coast**

Transport is investigating the feasibility of a rapid bus solution for the Central Coast to enhance the attractiveness of public transport as a mode of choice by improving reliability, speed, priority and coverage of the bus network. The rapid services seek to reduce travel times on critical routes within and between the districts and will be supplemented with bus priority measures to improve reliability. Potential routes could include Terrigal to Gosford via Erina, and Charmhaven to Tuggerah via Kanwal.

Transport will continue to assess opportunities for the early introduction of bus services to serve new housing release areas and emerging precincts as they are established, allowing residents to be connected to key destinations, and making precincts more attractive for potential residents. This will be essential in providing for and attracting residents in the Regionally Significant Growth Areas of Tuggerah, Karagi, Somersby and Warnervale as identified in DPE’s Draft Regional Plan 2041.



▲ Aerial view of Long Jetty.

### **Investigate on-demand services to expand service areas**

For those living in more rural villages, like the Watagan district, trips by private vehicle are often the only way for people to travel to their nearest centre or beyond the region. Transport acknowledges that there is no one-size-fits-all approach in connecting people from smaller towns and villages to their larger centres. On-demand transport is a flexible transport service that is not fixed to a formal route or timetable and can pick passengers up from a convenient location and take them to where they need to go.

Transport has been trialling on-demand bus services regionally to better understand customer needs within smaller communities. These services provide connections to their nearest regional centre for access to health services, shopping and employment

services. The results of the now complete Woy Woy CoastConnect trial, which connected commuters with train services at Woy Woy station during peak periods, will be used to inform planning for on-demand services across the Central Coast. Transport will work with Central Coast Council, community and transport providers to identify opportunities for additional on-demand services in the Central Coast.

### **Invest in connecting the waterways of the Central Coast**

The Central Coast includes a number of waterways. These waterways provide an additional avenue for residents to travel between their places of residence, work and play. Transport will investigate the possibility of revised and additional ferry services to better connect residents living close to the water.

### Objective 3 – Provide efficient, reliable, comfortable and safe connectivity between Central Coast, Greater Sydney and Newcastle.

The growth of Greater Sydney over the next 20 to 40 years will directly influence the growth of surrounding cities resulting in Gosford becoming a satellite city, and a part of the Greater Sydney urban area (see Figure 10). Gosford, and the Central

Coast, will evolve to strengthen critical linkages to jobs and services within Greater Sydney, as well as to the global gateway of Newcastle due to their proximity and improved road and rail connections.

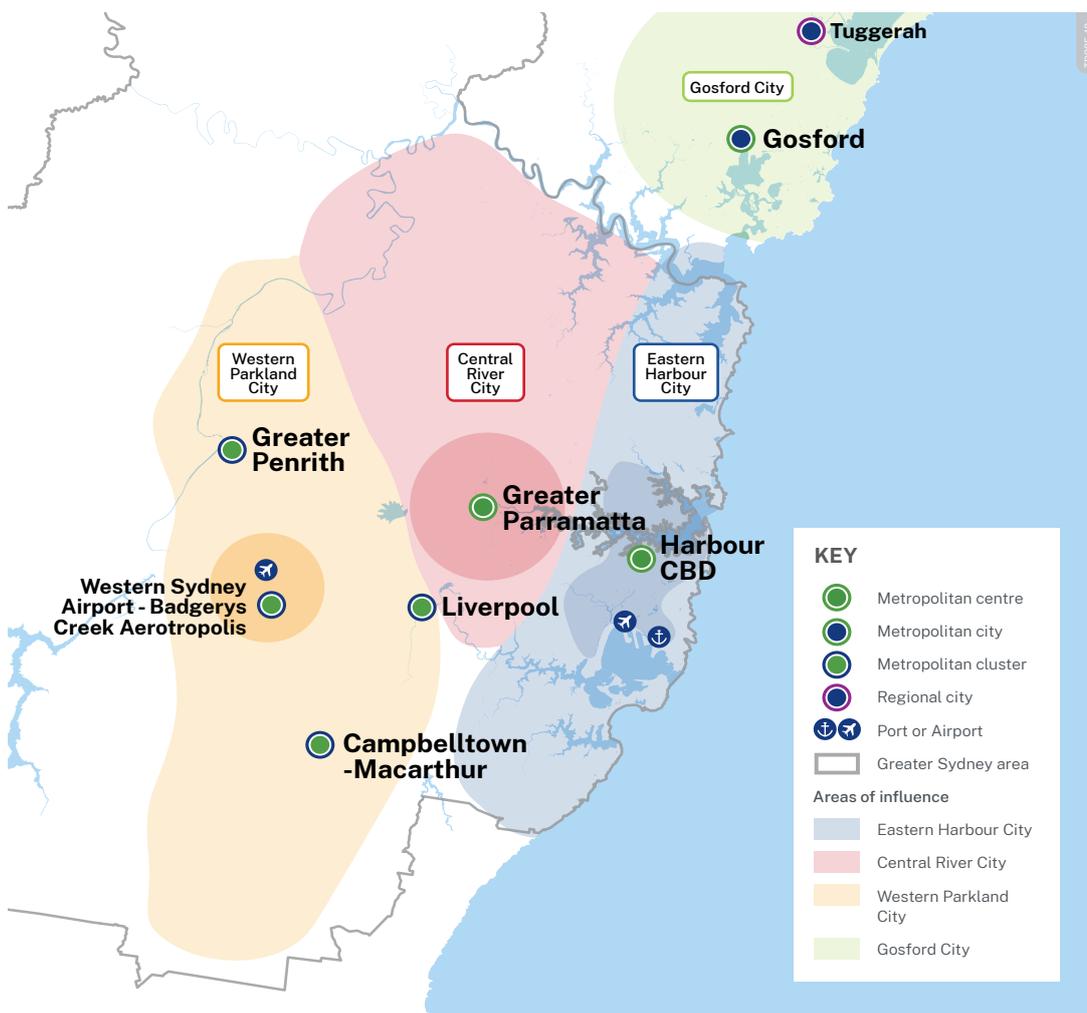


Figure 10: Greater Sydney urban area

The region's proximity to Sydney and Newcastle via both road and rail, and its diverse natural amenity, lends itself to capitalising on both domestic and international tourism. This is especially important as NSW recovers economically from COVID-19 and domestic and international travel restrictions.

To effectively capitalise on both domestic and international tourism, transport between the Central Coast and Sydney and Newcastle will need to be legible, integrated, and operate in a way that can adapt to peak holiday and event periods while encouraging visitors to arrive by rail and bus to mitigate the congestion impacts to roads.



Figure 11: Artist's impression of external view of the Mariyung Fleet train

Transport will:

- Deliver a New Intercity Fleet between Sydney and Newcastle via the Central Coast
- Continue exploring Fast Rail opportunities to reduce public transport travel times
- Deliver carpooling opportunities to reduce congestion
- Continue investing in road projects

### **Deliver a New Intercity Fleet between Sydney and Newcastle via the Central Coast**

Transport is delivering a new state-of-the-art fleet of intercity trains that will provide a new level of comfort and convenience for the thousands of customers who travel between Greater Sydney and Newcastle via the Central Coast. The Mariyung, also known as the New Intercity Fleet (NIF), will deliver improved accessibility, enhanced safety, improved comfort and modern features such as dedicated space for luggage, bicycles and prams.

Testing of the new fleet is in its final stages, with a date for the train to enter service on the Central Coast and Newcastle Line to be determined some time in 2022.

### **Continue exploring Fast Rail opportunities to reduce public transport travel times**

Transport is committed to improving the accessibility of the Central Coast to Greater Sydney and Newcastle by public transport. With consideration for future connectivity, Transport is currently developing the Fast Rail Strategy for NSW. In addition to improving inter-regional connectivity into Sydney, a key benefit of the Fast Rail network will be significant improvements in regional connectivity, providing centres such as Gosford with higher order connections to other centres, with the potential to deliver a travel time of 30 to 60 minutes between Gosford and Sydney.<sup>11</sup> Fast Rail improvements will also present opportunities to improve the existing heavy rail network, allowing other services to have improved time of day servicing and frequencies.

In the short to medium-term, the Fast Rail Strategy will aim to deliver Faster Rail with services of 200kph using existing rail routes and new fleets, by making track improvements on existing routes such as junction rearrangements, curve easing, or level crossing removals. In the long-term, the focus will be on delivering a High Speed Rail network, requiring new dedicated and purpose-built lines and new trains.

### **Deliver carpooling opportunities to reduce congestion**

Carpooling schemes provide an opportunity to reduce traffic volumes and parking demand around key locations. Existing formal and informal carparks are located adjacent to the M1 Pacific Motorway interchanges (such as Kariong, Ourimbah and Tuggerah) where people carpool for the remainder of their journey. Transport will investigate more carpooling opportunities in the Central Coast in targeted locations to shift more trips away from single driver private vehicles.

### **Continue investing in road projects**

The Pacific Highway and M1 Pacific Motorway provide critical links and quick access to both Sydney and Newcastle for employment opportunities and tourism. Transport will continue to improve these and other key road corridors across the region to strengthen and increase efficiency on key freight routes.

Projects that Transport are investing in and investigating include:

- The duplication of the Pacific Highway between Ourimbah Street and Parsons Road at Lisarow which will deliver improved traffic flow, travel times and safety
- The Central Coast Highway upgrade between Wamberal and Bateau Bay which will deliver improved reliability in travel time and reduced congestion
- The upgrade of Pacific Highway through Wyong Town Centre which will deliver improved safety and traffic flow reliability

The Outer Sydney Orbital Stage 3 (OSO3) investigation is considering the preservation of new corridors connecting

<sup>11</sup> 30 minutes between Gosford and Sydney is High speed rail >250kph; 60 minutes is Faster Rail <200kph. [nsw.gov.au/a-fast-rail-future-for-nsw](https://nsw.gov.au/a-fast-rail-future-for-nsw)

the Central Coast with Western Sydney where it would connect with the Outer Sydney Orbital Stage 1. OSO3 would provide additional capacity for road and freight rail transport between Greater Sydney and the Central Coast and provides a strategic connection between the Western City and the Satellite City of Gosford.

## Safe

### A transport network that delivers a safer future for the Central Coast

Transport’s customers and the community place a high value on safety. In fact, safety is a non-negotiable aspect of transport within NSW. People expect to safely complete their transport movements and for their friends and family to do the same – as road and transport trauma are unacceptable to the community.

The Road Safety Plan 2021, a key supporting plan of **Future Transport 2056**, highlights the priority areas, actions and initiatives required to help NSW achieve the ambitious ‘Towards Zero’ goal of zero fatalities and serious injuries on

roads by 2056. This is particularly relevant for regional NSW with the fatality rate on country roads four times the comparative metropolitan rate with more than 70 per cent of people who die on country roads being local residents.

Figure 12 shows that there were 63 fatal crashes and 1,015 serious injury crashes over the five years 2016-2020, around 215 total fatal and serious injury crashes across the Central Coast annually.

Through the following objectives and their corresponding initiatives and interventions, this Plan will deliver a safer transport network for the Central Coast that proactively reduces fatal and serious injury crashes in-line with ‘Towards Zero’ goal.

**Objective 4** – Proactively address road safety deficiencies and high-risk sections on the road network and address crash clusters across the Central Coast

**Objective 5** – Improve safety outcomes with the use of technology

**Objective 6** – Improve safety along the waterways in the Central Coast

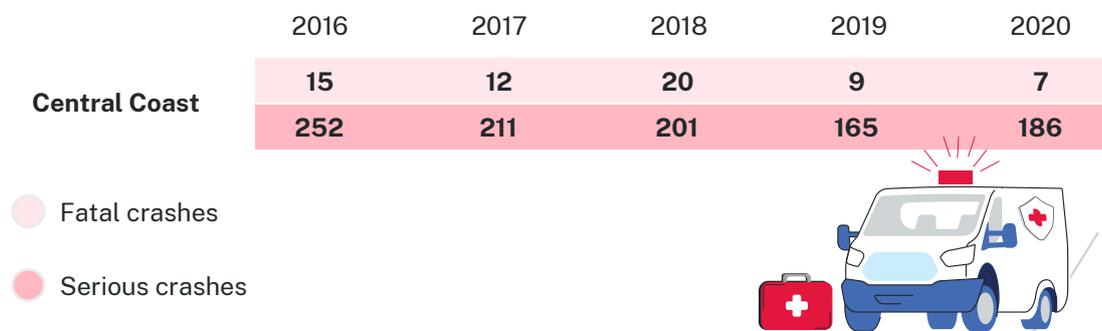


Figure 12: Fatal and serious injury crash totals for the Central Coast 2016-2020  
Source: Transport for NSW 2021



#### Objective 4 – Proactively address road safety deficiencies and high-risk sections on the road network and address crash clusters across the Central Coast

NSW has set a target of zero trauma on the transport system by 2056 committing to significant reductions in absolute and per capita rates of trauma across all transport services. Achieving the safety vision will require a mix of targeted and proven initiatives that consider how people, vehicles, infrastructure and technology work together to create a safe system now and into the future.

To achieve this objective, Transport will:

- Apply the Safe System approach to road safety to proactively move the Central Coast ‘Towards Zero’
- Utilise the Saving Lives on Country Roads (SLCR) initiative to proactively support a safer road network across the Central Coast
- Implement targeted improvements through the Central Coast to reduce crash clusters and deliver reductions in road trauma
- Review and set appropriate speed zones for improved safety outcomes for all customers
- Deliver public awareness and education campaigns to support the proactive approach to road safety

▲ Aerial view of the Pacific Motorway and the Mooney Creek Bridge.

### Apply the Safe System approach to road safety to proactively move the Central Coast 'Towards Zero'

Across the Central Coast, Transport will apply the Safe System approach when managing the transport network. The approach recognises that people do make mistakes, road safety is a shared responsibility, and roads and vehicles need to be designed to minimise the likelihood of a crash or reduce the force if a crash does happen. The Safe System approach will be aligned with the Movement and Place Framework, Asset Management Framework and NSW Speed Zoning Guidelines.

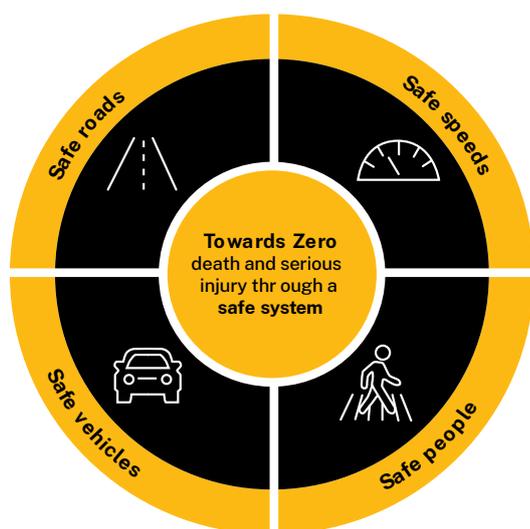


Figure 13: The Safe System approach

Safety barriers are used as safety infrastructure to mitigate the effects of run-off-road and head-on crashes. The presence of safety barriers results in a reduction of severe crashes and these treatments are being rolled out on major highways across the region. Flexible safety barriers reduce the severity of crashes by up to 95 per cent.

Audio tactile line marking (ATLM), which provides a noise (audio) and vibratory (tactile) warning to road users is being rolled out on major highways across the region. The purpose of ATLM is to reduce 'run-off-road' or cross carriageway crashes who may stray due to fatigue or poor visibility due to rain or fog. ATLM is currently being installed on targeted sections of the M1 Pacific Motorway, with this treatment known to reduce targeted crashes by up to 25 per cent.

### Utilise the Saving Lives on Country Roads (SLCR) initiative to proactively support a safer road network across the Central Coast

Transport will continue to utilise the Saving Lives on Country Roads (SLCR) initiative to proactively support a safer road network across the Central Coast. The initiative is designed to address two key contributors to road fatalities and serious injuries on country roads – high-risk curves and driver fatigue.

Under the SLCR initiative, Transport is delivering safety improvements on Wisemans Ferry Road at Mangrove Mountain, multiple intersections in Greater Gosford and Woy Woy, Wyong Road, Wilfred Barrett Drive, and numerous lengths and intersections of the Pacific Highway. A complete list of current projects can be found at [towardszero.nsw.gov.au/safesystem/safe-roads](https://towardszero.nsw.gov.au/safesystem/safe-roads).

### **Implement targeted improvements through the Central Coast to reduce crash clusters and deliver reductions in road trauma**

While Transport will take a proactive approach to road safety where possible, there will still be an ongoing need to resolve crash clusters and priority sites across the region. For the Central Coast, Figure 14 shows that a high concentration of crashes recorded between 2016 and 2020 occurred around Woy Woy and Umina, along lengths of the M1 Pacific Motorway, within and along the main access roads into Gosford, and along the Central Coast Highway at The Entrance.

Through the Safer Roads Program, Transport will continue to work with local government to resolve crash clusters and priority sites across the Central Coast to deliver sustainable and long-term reductions in road trauma.

### **Review and set appropriate speed zones for improved safety outcomes for all customers**

Speed limits are set so vehicles are better able to safely respond to potential risks in the road environment. Speed limits need to be cognisant of Movement and Place, considering both activities and land use beyond the pavement. Transport will carry

out speed zone reviews across the Central Coast to determine the appropriateness of existing posted speed limits. Where it is established that the speed zone is not appropriate for the local environment, speed limits will be adjusted accordingly.

Pedestrians and cyclists are especially vulnerable and crashes involving these modes tend to be under-reported. To support a safer environment for people walking and cycling, Transport is looking to roll out 30km/h speed zones across NSW in areas of where the land use and surrounding activity warrant a lower speed environment. Transport will work with Central Coast Council to identify sites for similar trials where appropriate.

### **Deliver public awareness and education campaigns to support the proactive approach to road safety**

A number of behavioural factors can be attributed to fatal and serious injury crashes. Across the Central Coast, speeding is a factor in 33 per cent of fatalities and serious injuries, followed by fatigue (10 per cent).<sup>12</sup> Transport currently has a number of projects and campaigns underway or planned in the Central Coast to address behavioural issues as part of the 'Towards Zero' vision.

<sup>12</sup> Centre for Road Safety data for the Central Coast 2016 and 2020; proportion of recorded crashes which result in fatality or serious injuries

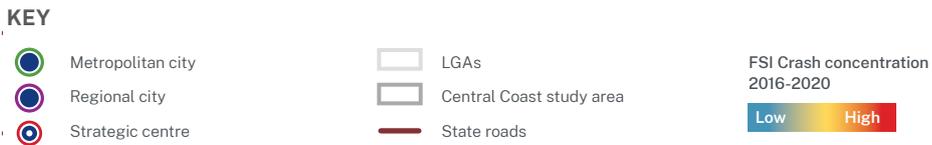


Figure 14: Fatal and Serious Injury Crash Concentration 2016-2020

Aboriginal people are over-represented in serious road trauma in NSW. A key commitment under the NSW Road Safety Strategy is to improve Aboriginal Road Safety through a range of actions that will reduce the risk and severity of crashes faced by Aboriginal people on NSW roads.

The Local Government Road Safety Program (LGRSP) funds educational and behavioural initiatives to address local road safety priority issues such as drink and drug driving, fatigue, speeding and pedestrian safety. Transport will continue to supplement these initiatives with public awareness and education campaigns to further support a proactive approach to road safety.



## Objective 5 – Improve safety outcomes with the use of technology

Technology underpins an integrated multimodal safer system approach across road, rail, air and aquatic networks, vehicles, vessels, services and people, to keep people safe and healthy. Transport is committed to using technology to improve safety outcomes across the Central Coast.

In achieving this objective, Transport will:

- Lead the way in adoption of the latest safety technologies by upgrading Transport's fleet
- Deliver smart infrastructure that reduces the impact of human error
- Leverage and manage the ubiquity of smartphones to deliver safe outcomes

- Partner with industry and researchers to deliver new safety innovations
- Lead the way in adoption of the latest safety technologies by upgrading Transport's fleet

NSW's Road Safety Plan prioritises the uptake of new safety technologies in the NSW vehicle fleet. NSW Government will lead the way, ensuring that fleet vehicles have the latest and proven safety technologies, including auto emergency braking, lane keep assist and other driver assist technology. The NSW Government will also explore options to ensure Government contractor vehicles meet the same standard.

▲ Speed Social Tile  
© phpetrunina14,  
stock.adobe.com

NSW is also embracing connectivity and automation to achieve safety and efficiency benefits and service improvements for customers. The Connected and Automated Vehicles Plan underpins Transport's commitment to ensuring the latest technological advances can be introduced in a safe and timely manner to deliver a safer and smoother driving experience.

#### **Deliver smart infrastructure that reduces the impact of human error**

The M1 SMART Motorway project will introduce intelligent technology known as a motorway management system. This includes variable speed limits, dynamic message signs and, where required, ramp meters to meter traffic flow. These technologies are already being proven on the M4 SMART Motorway in Sydney, improving incident response times and reducing speed limits when needed with limited human intervention.

A robust safe systems approach also applies to rail and maritime operations and all aspects of freight, with Automatic Train Protection (ATP) technology providing rail safety benefits. ATP ensures trains operate within the permitted track speed and provides a safer train journey for customers. ATP is now operational on the passenger network from Newcastle to Narara and from Cowan to Tascott on the Central Coast and Newcastle Line. Further work will continue to implement the technology from Narara to Tascott.

#### **Leverage and manage the ubiquity of smartphones to deliver safe outcomes**

Applications such as Speed Advisor can assist drivers throughout the region, particularly on longer drives or where speed limits fluctuate. The free smartphone app was developed by Transport and is designed to reduce the incidence of speeding by notifying the driver in real-time when the posted speed limit has been breached.

Transport has also implemented innovative technologies like the world-first mobile phone detection cameras to reduce driver distraction.

Additionally, to help reduce the amount of mobile black spots across the Central Coast, the NSW Government is committed to improving and extending mobile coverage in rural and regional areas. The Mobile Black Spot Program in NSW targets mobile black spots specifically within smaller regional and rural communities.

#### **Partner with industry and researchers to deliver new safety innovations**

Transport actively supports the uptake of innovation to deliver safer outcomes for all customers. As part of the Transport Digital Accelerator and Open Data Hub, Transport run a number of innovation challenges that address safety issues.

Recent innovation challenges include the Safety After Dark program which aims to improve safety of mobility for women, at night. This program includes work with the University of Wollongong to develop an artificial intelligence algorithm to detect threatening behaviours on the network.

The Boating Companion Innovation Challenge aimed to make boating safer for inexperienced waterway users. As a result of this challenge, two mobile applications were developed for use by recreational waterway users. Transport assisted with the incubation process and provided marketing of the endorsed applications.

## Objective 6 – Improve safety along the waterways in the Central Coast

Within NSW there are over 240,000 registered recreational vessels and 850,000 licensed recreational fishers. The safety of recreational customers upon waterways is essential and Transport's long-term vision is to achieve zero fatalities and zero serious injuries by 2056 through initiatives identified in the Maritime Safety Plan 2017–2021.

The Central Coast has approximately 80 kilometres of coastline in addition to its lakes and waterways which are attractive recreation areas for locals and visitors alike. These natural amenities are an asset to the region's liveability and economy so improving safety and maintaining access are priorities.

Since 2019, there has been a significant increase in new boat (26 per cent) and license (52 per cent) registrations as more people get out on the water in their leisure time. As such, safety along the Central Coast's waterways is more important than ever.

To achieve this objective, Transport will:

- Provide safe access to waterways through infrastructure improvements
- Maintain safe boating access through sustainable dredging
- Allow for equitable access to waterways by minimising conflicts
- Encourage the safe use of waterways through Aboriginal boating safety programs
- Deliver awareness and education programs to support waterway safety

### **Provide safe access to waterways through infrastructure improvements**

This program provides grant funding for local councils, boating and community groups, and private sector organisations to improve maritime and infrastructure facilities. Previous grants in the Central Coast have included wharf upgrades at Little Wobby, Davistown, Empire Bay and Spencer, and Mulloway Reserve Boat Ramp Car Park Upgrade on Lake Macquarie. Transport will continue to advertise rounds for the program.

This Plan also identifies a number of key investment locations including Lower Hawkesbury River and Brisbane Water. Priority infrastructure outcomes have been identified for each location to support current and future demand including sufficient water storage and pump out facilities and modern boat ramp infrastructure.

The \$205 million Maritime Infrastructure Stimulus Program announced in October 2020 delivers improvements to NSW Government owned maritime infrastructure assets across NSW, including on the Central Coast as part of a \$29 million regional maritime infrastructure and foreshore upgrade program.

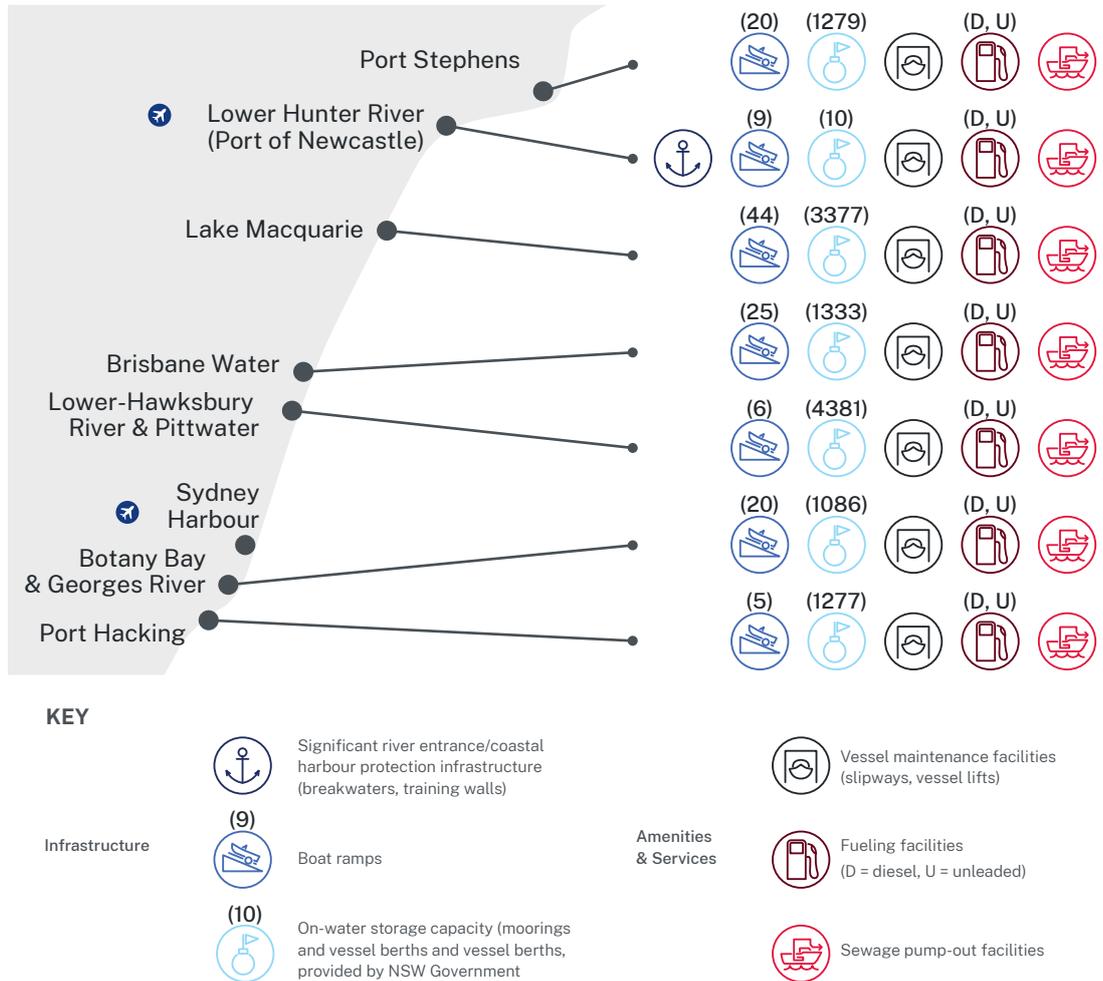


Figure 15: Existing infrastructure at key locations on NSW coast

**Maintain safe boating access through sustainable dredging**

Through the Maritime Infrastructure Plan and Coastal Dredging Strategy, recent improvements have included boating access through the Ettalong Channel at Brisbane Water.

Alongside this, Transport is looking to develop a long term dredging program which will help to establish an efficient way of dredging priority channels along the NSW coast.

**Allow for equitable access to waterways by minimising conflicts**

Transport will continue to look for ways to provide equitable and safe access to waterways, balancing the conflict of boating activities and protection of marine parks and provide a network of infrastructure for vessel servicing and pump out facilities.



### **Encourage the safe use of waterways through Aboriginal boating safety programs**

Transport recognises that waterways are an important place for Aboriginal people to connect with family members, attend funerals and participate in cultural events. The Aboriginal Maritime Safety Plan will help prevent boating incidents amongst Aboriginal people by promoting boating safety in NSW and the Central Coast.

### **Deliver awareness and education programs to support waterway safety**

The Maritime Safety Plan supports a waterway safety culture by simplifying and expanding lifejacket laws, use of technology, an updated licensing framework and working with industry to promote understanding of risks. Transport will soon release the updated **Maritime Safety Plan 2026**.

Future technology will play a role in providing more personalised information for customers wanting to access waterways and creating a safer and more environmentally sustainable marine environment by enabling innovative solutions, such as autonomous and electric vessels.

## **Liveable**

A transport network that supports places while enabling the successful movement of people to access jobs, services and social opportunities regardless of age, ability and income

**Future Transport 2056** highlights the vital role transport plays in land use, tourism, and the economic development of villages, towns and cities, as well as enabling the character of the places and communities for the future.

The DPE Draft Regional Plan identifies some of the desirable outcomes for key places across the region. Through the following objectives, this Plan sets out how transport will positively contribute to the liveability of the region, and identify the initiatives required to eliminate barriers to travel at all stages of life and regardless of age and ability.

**Objective 7** – Enable and support successful places to live, work, and visit

**Objective 8** – Improve mobility options to reduce transport disadvantage

**Objective 9** – Improve travel information and legibility

**Objective 10** – Embed and embrace Connection to Country

▲ Boats moored in Brisbane Water, Woy Woy.  
© Destination NSW.



▲ Row boats on Tuggerah Lake at The Entrance.

## Objective 7 – Enable and support successful places to live, work, and visit

As the designer, builder, operator and regulator of transport assets, the activities of Transport have significant impact on neighbourhoods, centres, cities and regions. The way infrastructure is designed makes a difference to people's quality of life, directly affecting what they value or dislike about the places where they live, work or visit.

In support of this objective, Transport will:

- Focus on appropriate movement and place planning outcomes for all infrastructure projects
- Collaborate with Central Coast Council on planning and implementing place planning strategies
- Improve liveability within the region by addressing severance of cycling and walking links
- Follow the 15-minute neighbourhood planning principles to support successful places

- Help facilitate better place outcomes by applying suitable traffic measures in town centres
- Investigate the potential kerbside amenity benefits of emerging technologies including electric vehicles in town centres

### **Focus on appropriate movement and place planning outcomes for all projects**

Movement and Place is a cross-government framework for planning and managing roads and streets across NSW. The framework delivers on NSW policy and strategy directions to create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places.

Movement and Place considers the whole street including footpaths, from property line to property line. It takes into account the needs of all users of this space including pedestrians, cyclists,

deliveries, private vehicles and public transport, as well as people spending time in those places. This framework will help facilitate collaboration with stakeholders and deliver improved amenity and liveability for key places across the region, ensuring balance is achieved between the need to facilitate movement while supporting successful places.

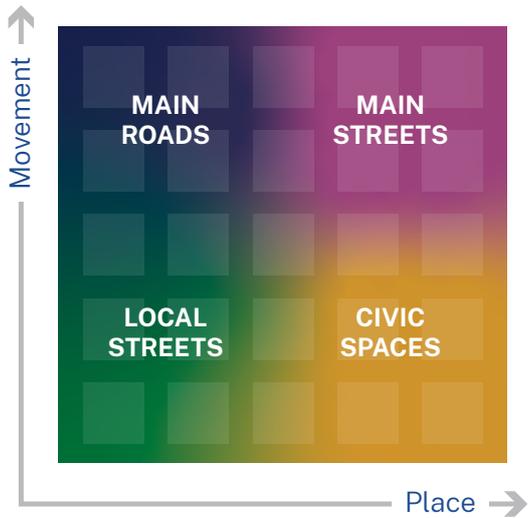


Figure 16: The four street environments that have been identified for analysing the combinations of movement and place in NSW

**Collaborate with Central Coast Council on planning and implementing place planning strategies**

In 2018, the NSW Government delivered a suite of planning reforms to support revitalisation of the Gosford City Centre, identifying integrated and linked places within walking distance of one another.

Transport is committed to achieving this vision for Gosford and will progress the development of a place-based transport plan for Gosford that balances the needs of movement and place and enables Gosford to be the vibrant, thriving, and liveable capital of the Central Coast. The place-based transport plan will be developed with relevant State and local government agencies and support Gosford’s ongoing transformation, supporting the focus areas identified in DPE’s Draft Regional Plan 2041:

- Health and Wellbeing Precinct including the \$348 million redevelopment of Gosford Hospital
- Education and Employment Precinct including the government priority to attract a university campus to the CBD<sup>13</sup>
- Waterfront Precinct including precinct planning and investigation of potential enhancements to this area.<sup>14</sup>



Figure 17: Artist impression of the revitalised Civic Heart of Gosford.

13 Central Coast Council LSPS Priority 12  
14 Central Coast Council LSPS Priority 6



Figure 18: Woy Woy Town Centre Wharf Redevelopment

Current and emerging strategic centres like Warnervale, Wyong, Tuggerah, Erina, Karagi and Woy Woy provide a diverse range of, jobs, shopping, services, and leisure. Woy Woy has particularly diverse transport infrastructure including ferry, cycle, rail and road, with local Council further encouraging its liveability and growth through a revitalisation of the Woy Woy Town Centre Wharf.

As the current and emerging strategic centres develop, it will be important to consider how conflicts can be avoided between land uses. Like Gosford, these centres could benefit from a collaborative planning approach between state and local government. Transport will continue to work with Central Coast Council in determining the need and developing individual place-based transport plans into the future. This is especially important for the Regionally Significant Growth Areas of Tuggerah, Karagi, Somersby and Warnervale identified in DPE's Draft Regional Plan.

### **Improve liveability within the region by addressing severance of cycling and walking links**

Across the Central Coast there are opportunities to leverage tourism and high levels of bicycle use at the beachside caravan parks which are often a short distance from shops. Safe and connected cycling infrastructure connecting shops, parks and beaches can help improve liveability for locals, as well as visitors, and create more successful places. Transport will work with local government to develop a connected cycleway network for the Central Coast to ensure a seamless bicycle network.

Transport will utilise the Movement and Place framework to inform improvements proposed for the Gosford CBD to improve amenity, reduce travel times and safety in these centres. Transport will also investigate future opportunities across the Central Coast to improve impacts of severance within centres caused by roads and rail corridors to improve permeability and promote a better balance of movement and place.

### **Follow the 15-minute neighbourhood planning principles to support successful places**

Funding has been announced through the Streets as Shared Spaces program for a new shared zone and activation of The Esplanade at Umina Beach. This program aims to support the community during COVID-19 and test ideas for more permanent improvements to local streets, paths and public spaces.

#### **15-minute regions**

The 15-minute region is a principle about living locally and reflects the value people place on vibrant neighbourhoods where most of their everyday needs can be reached within 15 minutes by using public transport, walking or cycling – rather than by taking trips by private car. The principle responds to the way people increasingly want to live which has been reinforced in light of COVID-19. It supports healthier, more resilient and equitable communities. The principle also encourages efficient and more sustainable forms of transport and reduces per capita energy use.

### **Investigate the potential kerbside amenity benefits of emerging technologies including electric vehicles in town centres.**

Transport is also considering how emerging technologies and different forms of mobility will reshape the design of cities and towns, improving the amenity for all users of the road. Connected and Automated Vehicles (CAVs), electric vehicles, and point to point services have kerb and street allocation needs that differ from traditional drive and park models. This may change needs for parking and offer opportunities to reform the streetscape and how people interact with it. Transport will consider emerging forms of mobility in future planning and support the development of smarter, more successful places.

### **Help facilitate better place outcomes by applying suitable traffic measures in town centres**

Finally, Transport will review speed zones in town centres to help facilitate better place outcomes. Lower speed zones in targeted areas would help encourage a safer environment for pedestrians and allow for additional opportunities such as outdoor dining.

A safer pedestrian environment would also support mobility independence for young people in their local neighbourhoods. A more welcoming environment will increase the uptake of youth being able to walk or cycle to school and other activities reducing the burden of dropping children off at school on families' time budgets and productivity.



▲  
Bouddi National  
Park.

## Objective 8 – Improve mobility options to reduce transport disadvantage

Transport disadvantage is the effect of having less choice about when, where and how someone can travel compared to other people. Providing equitable access to transport options, regardless of a person's age, ability, personal circumstances or level of disadvantage is an important outcome when designing the transport network. Transport is committed to reducing transport disadvantage across the Central Coast by improving mobility options.

In support of this objective, Transport will:

- Invest in physical public transport infrastructure to provide equitable access for all customers
- Utilise on-demand and point-to-point services to expand service areas
- Support the elderly and aging population of the Central Coast through subsidised transport costs

- Improve transport options for youth in the Central Coast
- Continue to provide funding and reasonable fare structures to support public transport in the Central Coast
- Improve access to mobility options for Aboriginal and other disadvantaged communities

### **Invest in physical public transport infrastructure to provide equitable access for all customers**

First announced in 2012, the NSW Government has invested over \$2 billion to improve accessibility to transport facilities through the Transport Access Program (TAP). Through ongoing investment in the TAP, Transport will continue to deliver a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.



Figure 19: Artist's impression of the proposed Point Clare station upgrade

Planning is currently underway for a TAP upgrade at Tuggerah, while upgrades at Point Clare station are currently being delivered including new lifts, accessible parking, kiss and ride, access ramps, upgrades to path and stairs, reconfigured bicycle parking and upgrades to lighting, electrical infrastructure and CCTV.

#### **Utilise on-demand and point-to-point services to expand service areas**

Point-to-point transport options like taxis, hire cars, tourist services and rideshare have delivered flexible, convenient options for customers at a time of their choosing, via the route they prefer, and maintain

accessibility for people without access to a private vehicle or in areas where public transport services are limited.

On-demand services, such as the Community Transport Central Coast Limited (CTCCL) partnership trialled at Woy Woy demonstrate a flexible approach to investigating new transport services across the region. The partnership oversaw the service as well as developed the CoastConnect app. The results of this trial and others will be used to inform better planning for on-demand services across NSW. Transport will work with transport providers to identify further opportunities for on-demand services in the Central Coast.



Figure 20: CoastConnect provides commuter transport in the region

### **Support the elderly and aging population of the Central Coast through subsidised transport costs**

Reforms introduced in community transport also provide options to travel to medical appointments for disadvantaged groups in the community and enable groups like CTCCL to serve the Central Coast community to help reduce transport disadvantage. Anyone can use services provided by CTCCL, but services are subsidised for over 65s, National Disability Insurance Scheme participants, and for those who live in regional or rural Central Coast locations with limited public transport.

The NSW Government is also trialling a travel card for eligible seniors who live in regional, rural and remote areas of NSW to help reduce travel costs associated with living outside of major cities. The Regional Seniors Travel Card is a prepaid card with \$250 included to spend on travel-related expenses such as pre-booked NSW TrainLink train and coach services, fuel and taxi services.

### **Improve transport options for youth in the Central Coast**

Across the Central Coast, transport options can support the mobility and independence of young people. However, there are existing concerns surrounding the adequate provision, affordability and safety of public transport.<sup>15</sup>

Transport will work with providers to investigate the provision of youth specific community transport. Transport will also continue to address the affordability and safety of public transport.

### **Continue to provide funding and reasonable fare structures to support public transport in the Central Coast**

The Transport Access Regional Partnerships (TARP) grants program supports initiatives and provides funding to improve services and outcomes for transport disadvantaged groups in regional NSW. In the last two years the program has provided \$1.6 million in grants to fund around 80 programs around regional NSW.

Following recommendations by the Independent Pricing and Regulatory Tribunal (IPART), bus fares in regional NSW were reduced from January 2021, including the introduction of adult daily tickets capped at \$5 for short trips. More affordable fares provide equity across NSW, eliminate barriers to travel and encourage greater social inclusion.

### **Improve access to mobility options for Aboriginal and other disadvantaged communities**

People may experience transport disadvantage if they have limited access to a private vehicle or face barriers to obtaining and maintaining a licence. Since 2015, through Transport's Drivers Licensing Access Program (DLAP), more than 3,800 Aboriginal and disadvantaged Australians now have a driver's license through over 21,000 hours of driver instruction. A driver's license is more than the legal permission to drive and expansion of mobility options – it's the freedom to look for and travel to work or school, support family, and live a normal life.

<sup>15</sup> Central Coast Council Youth Strategy 2019-2024



Figure 21: Drivers Licensing Access Program (DLAP)

## Objective 9 – Improve travel information and legibility

Transport will aim to provide comprehensive, accurate information to deliver a more positive customer experience for more people, more often and empower greater real-time journey planning. To achieve this, Transport will:

- Deploy Transport’s technology roadmap for regional NSW to improve travel information
- Use technology solutions to improve the safety and user experience of walking and cycling
- Embed travel information in public transport options across the region
- Improve access to real time information with WiFi digital connectivity

### **Deploy Transport’s technology roadmap for regional NSW to improve travel information**

By as soon as 2024, Transport’s technology roadmap commits that technology will transform mobility in regional NSW by:

- providing real-time information and digital ticketing for all public transport services
- deploying cutting edge technology to create smart regional cities
- providing digital connectivity at transport hubs and on major services
- testing and deploying new mobility technologies in regional areas first

### **Use technology solutions to improve the safety and user experience of walking and cycling**

Technology can support customer information on pop-up cycleways, expanded digital information for bicycle riders, touchless pedestrian crossings, and notifying motorists of lower speed limits to provide a safer environment.

### **Embed travel information in public transport options across the region**

The Maryung Fleet will feature improved customer information through digital screens and announcements, CCTV and help points to ensure customers have access to the right information to support their journeys.

### **Improve access to real-time information with WiFi digital connectivity**

Central Coast transport customers can already access real-time information on where their service is and when their next service connects using real-time information technology. To improve customer experience, Transport will investigate ways to improve WiFi digital connectivity at key transport hubs and on board major rail services so that customers can stay informed and connected while they travel. This will support real-time information and efficient mobility, along with the information and payment system improvements, to help make public transport a more attractive option.

## Objective 10 – Embed and embrace Connection to Country

Many of the transport routes used today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that Australia’s First Peoples have followed for tens of thousands of years.

Transport acknowledges people are still travelling these ancient Songlines today, people still move resources, still do business and meet families along and, using these, Transport has an opportunity to make ‘Invisible Visible’ by embracing Australia’s rich history and Connection to Country.

This objective will improve the economic self-determination of Aboriginal communities within the Central Coast. In achieving this objective, Transport will:

- Deliver the actions set out in Transport’s Reconciliation Action Plan
- Collaborate with Darkinjung Local Aboriginal Land Council in planning decisions
- Reflect local Aboriginal culture with use of Aboriginal language through Transport’s assets
- Embrace Aboriginal heritage by integrating storytelling throughout transport options

### **Deliver the actions set out in Transport’s Reconciliation Action Plan**

Transport acknowledges that many transport networks have been guided by Aboriginal peoples’ patterns of movement and commits to:

- Improving the transport network in a way that respects traditional owners including the protection of Aboriginal cultural heritage

- Respecting and embracing the culture and values of First Nations at every stage of investment

In embedding and embracing Connection to Country, Transport will deliver the actions set out in its Reconciliation Action Plan including:

- Action 9: Increase Aboriginal and Torres Strait Islander supplier diversity to support improved economic and social outcomes
- Action 10: Promote respect for Aboriginal heritage and increase inclusion of Aboriginal art
- Action 11: Embed Aboriginal co-design principles across Transport cluster projects

### **Collaborate with Darkinjung Local Aboriginal Land Council in planning decisions**

Transport has developed a number of guiding principles and frameworks for Connecting to Country including Principles and Framework for Aboriginal Engagement, Aboriginal Cultural Protocol, Aboriginal Art Strategy and Aboriginal Culture and Heritage Framework. These documents along with the NSW Government Architect’s Connecting with Country Draft Framework together make a comprehensive suite to inform planning, design, and delivery of built environment projects in NSW.

Darkinjung is one of 120 Local Aboriginal Land Councils in NSW established under the Aboriginal Land Rights Act 1983. Darkinjung Local Aboriginal Land Council (DLALC) is a unique and significant landowner in the Central Coast with responsibilities to improve, protect and foster the best interests of Aboriginal persons within the region.

The Aboriginal Land State Environmental Planning Policy (SEPP) ensures that land owned by DLALC will be developed with their interests at heart. Additionally, Transport have a Memorandum of Understanding (MOU) accord with DLALC to better utilise Darkinjung land. Transport will continue to collaborate with Darkinjung Local Aboriginal Land Council to investigate and plan further initiatives.

**Reflect local Aboriginal culture with use of Aboriginal language through Transport’s assets**

In 2020, signs were installed on the Central Coast at Bushells Ridge, Catherine Hill Bay, Cheero Point, Doyalson, Empire Bay and Ourimbah,

to reflect the Darkinjung Country that motorists were driving through. These signs will help promote cultural awareness, demonstrate respect for Traditional Custodians and promote the use of Aboriginal language. Transport will continue to roll out similar signs across NSW and identify opportunities for this within the Central Coast.

Transport has also announced that the New Intercity Fleet is being named “Mariyung”, the Darug word for Emu, in acknowledgement of the local Aboriginal culture. The Mariyung Fleet will run through many Aboriginal Countries such as Darug country, as well as through Darkinjung country.

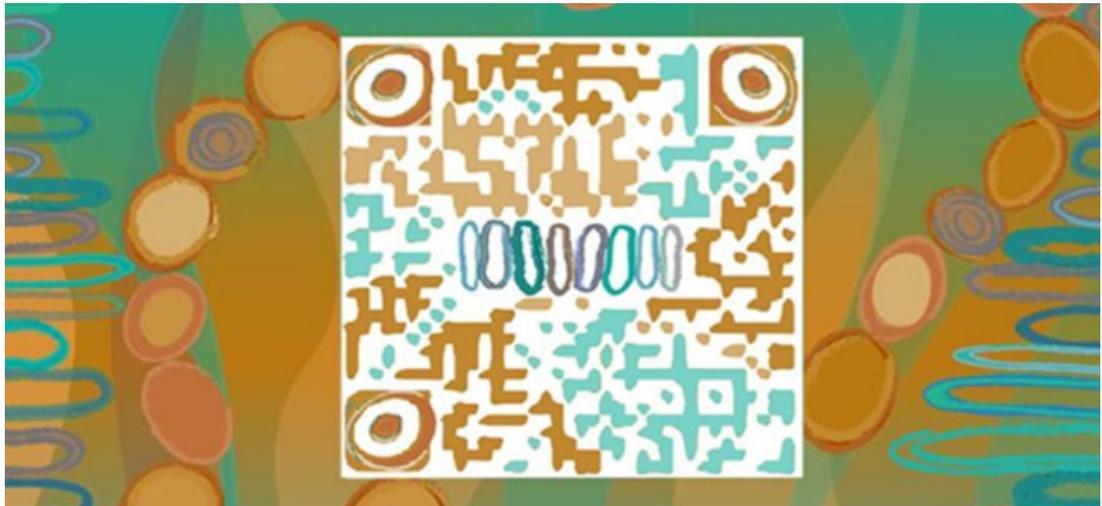
**Budgewoi Bridge – Graffiti Management**

As part of the Central Coast’s graffiti management strategy, graffiti on the underside of Budgewoi Bridge was removed.

In its place, a mural featuring Gurria, the rainbow serpent, has been installed. The mural tells the story of the creation of Tuggerah Lakes and is an opportunity to share the local history and Aboriginal culture.



▶ An example of a QR code, accessing stories of the history of the Awabakal and Darkinjung lands.



### Embrace Aboriginal heritage by integrating storytelling throughout transport options

Transport is exploring opportunities to embed Aboriginal heritage through its transport modes. In 2022, QR codes will be rolled out on trains between Sydney and Newcastle allowing travellers to access up to 13 Aboriginal stories that tell some of the history of the Awabakal and Darkinjung lands. As well as relating to places connected with the train's journey, the stories also reflect the broader theme of Country, and the important link between Aboriginal culture, nature and land.

### Sustainable

A transport network that both contributes to, and supports, a seamless transition to a low emissions future

The Net Zero Plan Stage 1: 2020-2030 is the foundation for NSW's goal to reach net-zero emissions by 2050 and presents a framework for how NSW will achieve a 50 per cent cut in emissions by 2030 compared to 2005 levels.

In support of this goal, one of the outcomes of **Future Transport 2056** is a transport system that is economically and environmentally sustainable, affordable for customers and supports emission reductions. This aligns with the Future Energy Strategy focus areas which reflect the energy hierarchy (Figure 22). Transport will be 'lean' (minimising energy demand), 'clean' (energy efficient and low emission) and 'green' (intelligent use of renewable energy and technologies).



▶ Darkinjung Country sign.

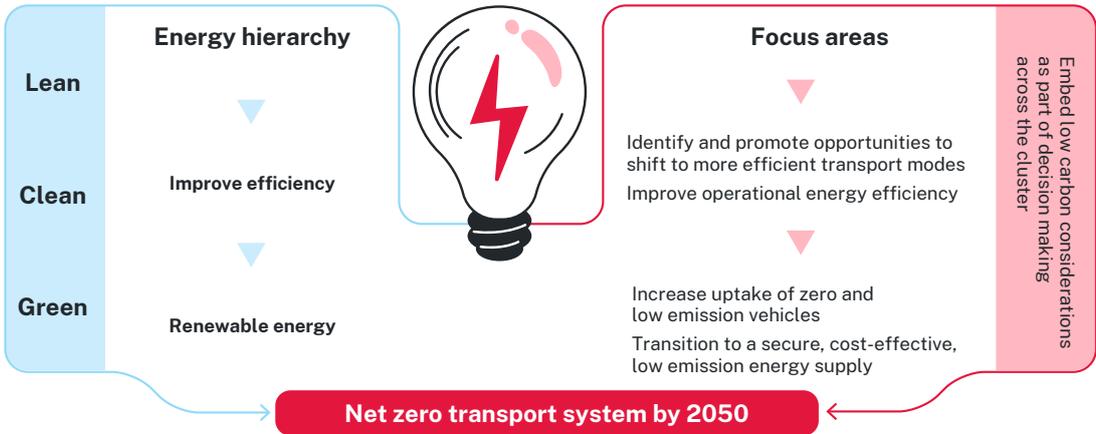


Figure 22: Future Energy Strategy Focus Areas.

Figure 23 shows the transport sector was the second largest contributor to greenhouse gas emissions in 2017.

The transport sector will need to adapt through a combination of infrastructure improvements, policy interventions and

behavioural change over the next 20 years, to meet the interim 2030 target, as well as drive the regional transition to a low emissions future.

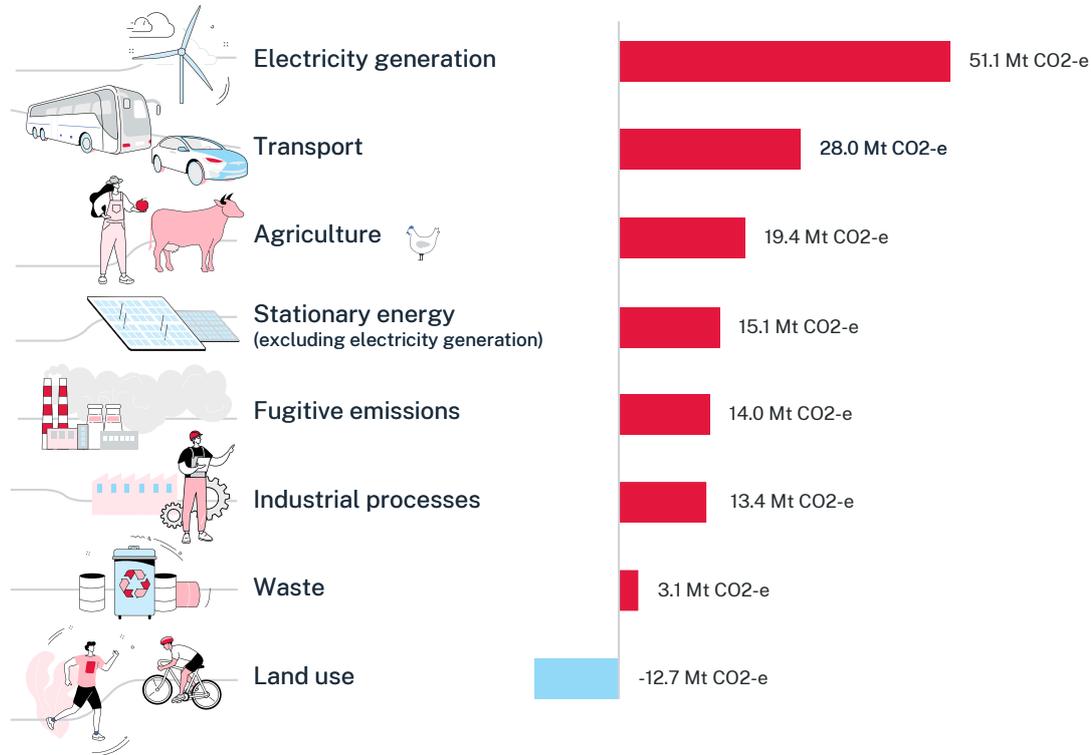


Figure 23: NSW emissions by sector in 2017

The NSW Government is in the early stages of planning for Renewable Energy Zones (REZs) in the Hunter-Central Coast and Illawarra regions of NSW. The REZ combines renewable energy generation, such as wind and solar, with batteries and improved transmission infrastructure in the same location to leverage economies of scale.

For the Central Coast, Transport has nominated the following objectives that also reflect the energy hierarchy (lean, clean, green) to transition the transport sector towards a low emissions future:

**Objective 11** – Increase the number of trips made by walking, cycling and public transport

**Objective 12** – Support the transition to lower emission technologies

### Objective 11 – Increase the number of trips made by walking, cycling and public transport across the Central Coast

Trips made on foot and by bicycle are in essence emission-free. Walking and cycling for commuting and short trips relieve pressure on the roads and public transport networks as well as providing health and wellbeing benefits.

Enabling more people across the Central Coast to walk, cycle and catch public transport over the next 20 years will play a key role in meeting NSW's goal to reach net zero emissions by 2050.

Census statistics show that, in 2016, 85 per cent of journeys to work on the Central Coast were made by private vehicle. By 2041, Transport envisions a reversal of this trend and an increase in the proportion of trips made by walking, cycling or public transport across the Central Coast.

A step change in travel behaviour will require Transport to collaborate with local government, State agencies, industry partners, and local communities, and be underpinned by a holistic suite of infrastructure and service improvements, and complementary education campaigns. Transport will work to improve the public transport customer experience and walking and cycling infrastructure. To

provide seamless, integrated journeys, Transport will orchestrate the different modes so that they work in harmony.

To achieve this objective, Transport will:

- Work with local government to close gaps in walking and cycling networks
- Encourage Central Coast Council to necessitate the provision of secure bicycle parking and end-of-trip facilities for all appropriate new developments
- Develop travel demand management (TDM) policies and establish travel plan requirements.
- Increase efficient and more sustainable travel methods for first and last mile

#### **Work with local government to close gaps in walking and cycling networks**

Through the NSW Government's Walking and Cycling Program, Transport will continue to work collaboratively with local government to address barriers to walking and cycling across the transport network, and aim to make active transport a more convenient option for short trips. Transport will also work with local government to develop a connected cycleway network for the Central Coast and improve connectivity regardless of the asset owner.

In addition, the recently adopted 'Providing for Walking and Cycling in Transport Projects Policy' requires that transport projects funded by Transport include provision for walking and cycling. Transport will also work with Central Coast Council, DPE and industry partners to ensure new neighbourhoods and employment zones are walking and cycle-friendly, integrated seamlessly with the existing active transport networks, and include complementary infrastructure that prioritises walking and cycling.

Since 2016, secure bicycle sheds have been installed at 25 train stations across the Greater Sydney rail network, including on the Central Coast at Woy Woy and Gosford. These facilities provide a sheltered, lockable facility with racks that can be accessed via the user's Opal card and can accommodate over 50 bicycles depending on the location. This provides a convenient option for customers to combine bike and train trips.

### **Encourage Central Coast Council to necessitate the provision of secure bicycle parking and end-of-trip facilities for all appropriate new developments**

Transport will also encourage Central Coast Council to necessitate the provision of secure bicycle parking and end-of-trip facilities – change room facilities, showers, personal storage space (lockers) – for all appropriate developments to further support the shift towards more sustainable travel behaviour across the Central Coast.

Transport has developed the NSW Cycleway Design Toolbox and NSW Walking Space Guide which showcase high-quality designs and can be used as guidance for Council.

## Woy Woy bicycle parking

Woy Woy's secure bicycle shed is among the best-used in the network, with more than two-thirds of the 54 bike racks typically being used. Encouraging bicycle riders to use these bike parking facilities relies on a range of factors – close distance to the interchange to ensure good passive and active surveillance, ease of access from access routes to the station, and proximity to the station entrance.



### **Develop travel demand management (TDM) policies and establish travel plan requirements**

TDM measures are crucial components of changing the way people travel and Transport prioritises their use in shaping sustainable travel behaviours. Travel Demand Management represents customers and their behaviours within the Movement and Place framework, proactively providing the linkage to create sustainable travel behaviour and demand centred outcomes.

TDM is the application of a focused, data led strategy that seeks to change demand on transport networks by redistributing journeys to other modes, times, routes or removing the journey altogether. They often consist of a package of interventions ranging from financial incentives to social marketing campaigns.

Transport will work with the region's stakeholders to develop TDM policies (re-time, re-mode, re-route and reduce travel) and establish travel plan requirements for new residential and employment developments. These policies could include working with employers to promote sustainable working and organisational practices such as allowing employees to work from home, encouraging travel outside the peak, and reallocation of road space to reduce the number of single occupant vehicle trips.

Reviewing car parking provisions, especially within Gosford and limiting parking in centres where strong public transport exists will further encourage people to catch public transport, walk or cycle to their destination. Exploring opportunities for park and ride, carpooling and car sharing services will further support a shift away from single occupancy private vehicles for the whole customer journey.

▶ Terrigal Boardwalk provides accessible pedestrian access around the headland between the Terrigal Beach and The Haven.

### **Increase efficient and more sustainable travel methods for first and last mile**

Further sustainability improvements will flow from new services that use vehicles and transport networks more efficiently, including Mobility as a Service (MaaS) where customers can combine private, shared and public transport, rather than rely on a private car. MaaS and on-demand shared services combined with electric and automated vehicles, offer more customer choices, convenience and affordability with better community amenity, while minimising vehicle numbers on the road, congestion and environmental impacts. Walking, cycling and micro-mobility options, such as electric bikes, help lower emissions for short trips, provides health and wellbeing benefits and provides connections to public transport.

The evolving micro-mobility transport sector, characterised by e-bikes, scooters and shared e-bike services, offer potential alternatives for commuting including first and last mile travel between homes and key destinations such as public transport hubs. Micro-mobility can reduce active transport barriers such as topography and distance, and positively impact travel within and between centres of the Central Coast.

First and last mile refers to the first and last legs of a journey and does not represent a specific distance. Many personal electric options have travel ranges up to 25 kilometres and micro-mobility options could also be considered as a door-to-door solution.

Transport will investigate how these devices can be safely accommodated into the transport network to provide customers with more choice and greater flexibility. This includes consideration for additional parking and infrastructure for these modes to support these micro-mobility options.





▲ Gosford Glow Path is a natural glow-in-the-dark footpath and provides lighting at night.

## Objective 12 – Support the transition to lower emission technologies

Electric vehicles (EVs) are forecast to reach upfront price parity with traditional combustion engine vehicles in Australia from 2024<sup>16</sup>. Combined with the NSW Government’s aspirational target of having up to 10 per cent hydrogen blended into the NSW gas network by 2030, there is a need to transition towards a future where both electric and hydrogen fuel cell vehicles become the norm rather than the exception.

The transition to a cleaner, greener transport future will require both leadership and collaboration between State agencies, local government and industry to deliver the required infrastructure and services that will enable and encourage the change to occur.

Transport will:

- Partner with industry to develop electric vehicle charging infrastructure
- Lead the charge in EV adoption by transitioning its passenger vehicle fleet
- Deliver zero and lower emission technologies in public transport services
- Investigate implementation of hydrogen fuel cell technology

### **Partner with industry to develop electric vehicle charging infrastructure**

Electric vehicles (EVs), particularly when powered by renewable electricity, provide a pathway to significant reductions in emissions from onroad transport.

<sup>16</sup> [environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/net-zero-plan-2020-2030-200057.pdf](https://environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/net-zero-plan-2020-2030-200057.pdf)

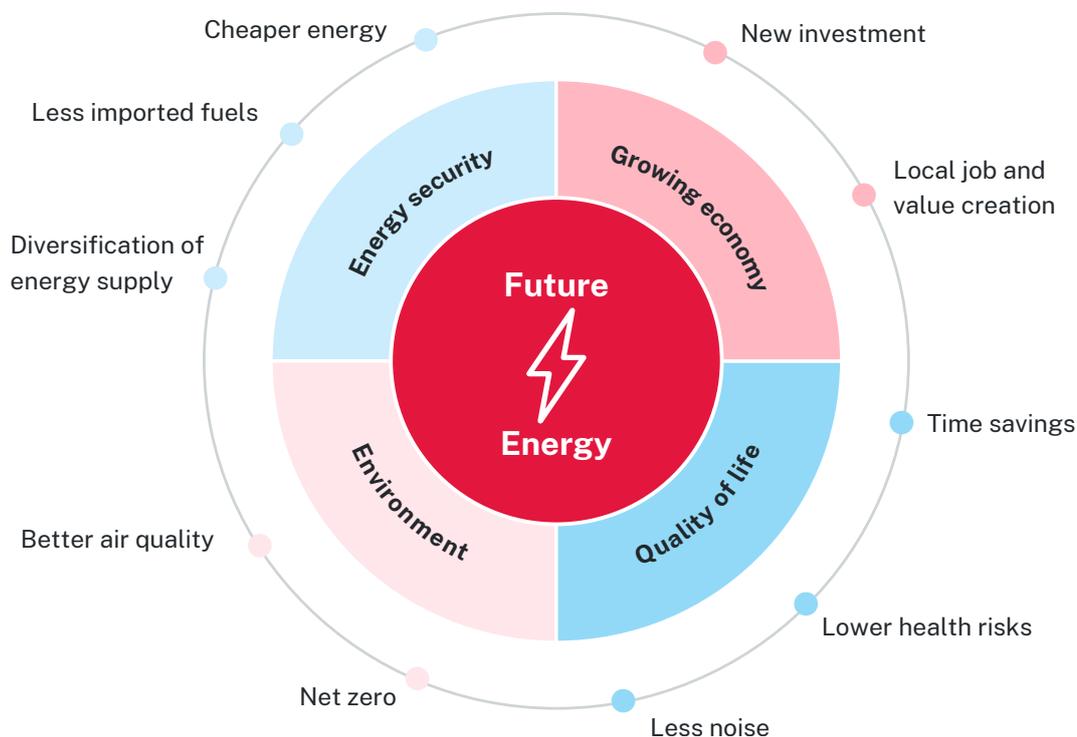


Figure 24: Benefits of EVs for the future of transport

Increased availability of EV fast chargers in the Central Coast can incentivise greater adoption in EVs in the region. Transport will continue working collaboratively with the NRMA, DPE and industry, to support the development of a comprehensive EV charging station network across regional NSW.<sup>17</sup>

The Federal Government has also announced the Future Fuels Fund which is focused on growing access to chargers for EV users in capital and regional cities. Round 1 funding will see EV chargers installed in Woy Woy, Gosford and Erina.

### **Lead the charge in EV adoption by transitioning its passenger vehicle fleet**

Over the next three years, Transport will start to transition its passenger vehicle fleet in the Central Coast, and will encourage local government and businesses to a similar transition in their respective fleets. The combined purchasing power of the public sector is expected to help provide the market with confidence to supply more affordable, low emissions products and services.

<sup>17</sup> [mynrma.com.au/cars-and-driving/electric-vehicles/future/powering-the-regions](https://mynrma.com.au/cars-and-driving/electric-vehicles/future/powering-the-regions)



Figure 25: Transport's commitment to an electric fleet

### Deliver zero and lower emission technologies in public transport services

The NSW Government is replacing the existing regional rail fleet with new diesel-electric bi-mode technology. This will allow the fleet to run on overhead power when operating on the electrified section of the train network, providing a more environmentally friendly rail service.

Transport is committed to transitioning the entire NSW fleet of over 8,000 mainly diesel buses to clean and quiet zero-

emissions buses. Over 50 electric buses have already been ordered and plans are underway to expand the transition across metropolitan and regional areas.

Transport will investigate opportunities to trial zero emission technology across the Central Coast, including electric and hydrogen-powered buses, to assess network compatibility and identify potential barriers to a larger bus fleet conversion in the future.



Figure 26: Zero emission electric bus

## Investigate implementation of hydrogen fuel cell technology

To boost the commercialisation of low emissions hydrogen production and applications, the NSW Government has set an aspirational target to include 10 per cent hydrogen into the gas network by 2030. This commitment is likely to have associated benefits for the transport sector, and could open up opportunities for hydrogen fuel cell vehicles across NSW.

Like electric vehicles, hydrogen fuel cell vehicles are emissions free, converting compressed hydrogen into electricity to power an electric motor. They offer the advantages of longer operating ranges, lighter weight and rapid refuelling capability, which may suit long distance freight operations.<sup>18</sup>

## Productive

### A transport network that supports the efficient and safe movement of people and goods to support economic growth for the Central Coast

The 20-Year Economic Vision for Regional NSW (2021) sets out the Government's priorities and plans to achieve long-term social and economic success for regional communities across the state.

This vision has recently been refreshed in response to the changed economic landscape and opportunities that have emerged in regional NSW following drought, bushfires, flooding and COVID-19.

The Central Coast Region provides strategic access to key markets and export opportunities. While recent shocks have impacted the tourism industry, the NSW Government has

identified clear opportunities to leverage the region's strengths in service sectors, lifestyle and amenity.

Infrastructure investment and economic diversification are being prioritised to accelerate recovery, while industries such as health care and social assistance will continue to drive significant employment and economic growth in the Central Coast Region. Transport is a key driver and enabler of this economic growth.

A productive Central Coast needs a transport network that supports the efficient, safe and sustainable movement of people and goods to support economic growth. Allowing freight to move freely around the region is important for business and industry to maintain access to local markets and beyond. This is particularly the case for the region's agricultural and extractive resource sectors, primarily located west of the M1. This Plan will support the vision and initiatives in the NSW Freight and Ports Plan as well as objectives in Transport's Heavy Vehicle Access Policy Framework.

Through the following objectives, this Plan will deliver a transport network that supports the efficient and safe movement of people and goods to support economic growth in the Central Coast.

**Objective 13** – Support efficient movement on freight corridors to maximise productivity

**Objective 14** – Improve connectivity to local jobs, health, education and attractions

18 [https://future.transport.nsw.gov.au/sites/default/files/2022-07/nsw\\_electric\\_hybrid\\_vehicle\\_plan.pdf](https://future.transport.nsw.gov.au/sites/default/files/2022-07/nsw_electric_hybrid_vehicle_plan.pdf)



▲ 20-year economic vision map.

### Objective 13 – Support efficient movement on freight corridors to maximise productivity

Currently, more than 12 million tonnes of freight are being moved by road across the Central Coast and this is forecast to increase to nearly 15 million tonnes by 2041. The Central Coast is a major manufacturing centre in NSW. The main commodities moved by road are construction materials and general manufactures, over 80 per cent of the total volume.

The region's manufacturing and construction material sectors are primarily located west of the M1 Pacific Motorway and the Somersby Industrial area is also likely to be a key area of growth in supporting the region's productivity. Connectivity to this area will be important in allowing freight to move around the region, and maintain access to local markets and beyond.

With overall road freight volumes transported in the region expected to grow by approximately 25 per cent over the next 20 years, it is more important

than ever to support efficient movement on key freight corridors to facilitate growth in productivity.

Transport will:

- Continue to improve existing road corridors across the region
- Protect key corridors to safeguard future freight productivity
- Strengthen rail freight opportunities
- Resolve first and last mile barriers for freight to support productive places

#### **Continue to improve existing road corridors across the region**

The Pacific Highway and M1 Pacific Motorway provide critical links and quick access to both Sydney and Newcastle for regional exports, employment opportunities or tourism. Transport will continue to improve these and other key road corridors across the region to strengthen and increase efficiency on key freight routes.

Projects that Transport is investing in include:

- The duplication of Pacific Highway between Ourimbah Street and Parsons Road at Lisarow which will deliver improved traffic flow, travel times and safety
- The Central Coast Highway upgrade between Wamberal and Bateau Bay which will deliver improved reliability in travel time and reduced congestion
- The upgrade of Pacific Highway through Wyong Town Centre which will deliver improved safety and traffic flow reliability

### **Protect key corridors to safeguard future freight productivity**

It is important to ensure that the needs of freight are accommodated into the future and to protect key freight corridors from incompatible land uses. Transport will work collaboratively with the DPE and local government to ensure freight corridors across the Central Coast are protected from incompatible land uses.

The Outer Sydney Orbital Stage 3 (OSO3) investigation is considering the preservation of new corridors connecting the Central Coast with Western Sydney where it would connect with the Outer Sydney Orbital Stage 1. OSO3 would provide additional capacity for road and rail transport between Greater Sydney and the Central Coast and provides a strategic connection between the Western City and Gosford.

### **Strengthen rail freight opportunities**

Transport is investigating options to increase rail freight capacity between Newcastle and Sydney via the Central Coast, accommodating for additional freight demand relieving over-reliance on trucks and improving reliability of passenger services as well. The Northern Sydney Freight Corridor (NSFC) Program

Stage 2 is under investigation to further accommodate rail freight demand between Sydney, Central Coast and Newcastle. The investigation into Stage 2 will complement NSFC Stage 1 works which delivered two passing loops built between Gosford and Narara stations among other improvements.

Additionally, the OSO3 investigation is considering an additional freight rail corridor between Gosford and Greater Sydney which will also increase rail freight capacity. This will help spread the freight demand and reduce the number of freight trucks on the road.

### **Resolve first and last mile barriers for freight to support productive places**

First and last mile access and urban servicing constraints are often barriers in the road network that inhibit freight productivity and can impact the success of places. Council-owned roads do not often facilitate the same level of freight access that the State road network provides, impacting the economic success of places.

Transport will promote the use of the Freight and Servicing Last Mile Toolkit in planning for and managing freight movements at both the precinct and individual development level. The toolkit is designed to deliver successful place outcomes.

Transport will investigate the capacity of existing programs to improve first and last mile access and efficiency across the freight network. This may include trialling light freight vehicle modes in busy urban environments such as bicycles and three-wheel electric delivery vehicles.

Transport will collaborate with DPE and Central Coast Council to support appropriate land uses such as the development of employment lands close to key M1 Pacific Motorway interchanges such as at Mt Penang, Tuggerah and Warnervale.

## Objective 14 – Improve connectivity to local jobs, health, education and attractions

A relaxed lifestyle and amazing natural assets make the Central Coast an idyllic place to live and do business. However, more than a quarter of the working population leave the Central Coast for work – most of these to Greater Sydney. The Greater Sydney Commission (GSC) in their Draft Central Coast Strategy recommends prioritising support of more jobs on the Central Coast so that residents have the choice to work locally.

The transport system will continue to play a key role in driving productivity and enabling economic activity across the Central Coast by providing access to local jobs, goods, and services as well as supporting mobility and choice for residents and visitors and supporting future jobs growth and opportunities.

Delivering improved multimodal connections will also be critical to enabling resilience in the network to drive productivity and support economic success. Transport will seek to support growth in visitor numbers and diversification of businesses in the Central Coast by providing better options to travel and improved services. Transport will:

- Provide improved connections to the Gosford and Wyong health precincts
- Explore additional transport options for education campuses
- Provide integrated multimodal transport options to key attractions in the Central Coast
- Explore transport options and policy to support new ways of working

### **Provide improved connections to the Gosford and Wyong health precincts**

The NSW Government is investing in the continued development of health precincts at the Gosford and Wyong hospitals to meet the growing needs for quality, local health care services in the Central Coast. Transport is committed to delivering connectivity to these precincts, reducing transport disadvantage for access to these services.

### **Explore additional transport options for education campuses**

Strategic education assets will drive innovation, provide local education and career paths for young people and support life-long learning for the ageing population. These assets include the Ourimbah University Campus, and the Gosford and Wyong campuses of Hunter TAFE. Residents in the northern parts of Sydney and parts of the Hunter Valley may also access these services.

Transport will explore opportunities for additional transport options so students from across the Central Coast can access these educational facilities by public transport. This will be crucial in capitalising on the opportunity to attract a university campus to the Gosford CBD as part of a wider education and employment area that builds on the Gosford Health and Wellbeing Precinct.

Transport will develop a place-based transport plan for Gosford that considers improved connectivity by all modes to employment, health, education, and attractions.



Figure 27: University of Newcastle Ourimbah Campus

### **Provide integrated multimodal transport options to key attractions in the Central Coast**

Visitor attractions encourage tourism, and increase spending and length of stay at a destination. While recent shocks have impacted the tourism industry, there are clear opportunities to leverage the lifestyle, amenity and services of the Central Coast Region.

Prior to COVID-19, the Central Coast had a vibrant tourism economy, surpassing \$1 billion of visitor expenditure in 2019, and this is expected to increase. There is great potential to renew and activate foreshore tourist areas such as the beach villages and Gosford Waterfront to enhance their accessibility and attractiveness. Peat Island represents a significant opportunity for additional open space, improved public access to the foreshore, and new tourist facilities including hotel accommodation.

Most visitors came via private vehicle (95 per cent<sup>19</sup>) adding to road congestion. To effectively capitalise on both domestic and international tourism, the transport network in the Central Coast will need

to provide more multimodal options for visitors, and adapt to seasonal demand during peak holiday and event periods, to reduce road congestion

Over the next 20 years, the Central Coast will continue to be a popular destination for visitors. The growing tourism sector will be supported through road upgrades as well as improved bus and rail services, walking and cycling connections providing safe and reliable access throughout the region.

### **Explore transport options and policy to support new ways of working**

COVID-19 has caused significant changes in travel patterns, with more people working remotely and travelling less for work, changing their mode of transport, or travelling at off-peak times. Employers have recognised the ability of staff to work remotely, thus expanding the labour pool, increasing options for employees and employers, and in some cases removing the necessity to commute for work.

<sup>19</sup> destinationnsw.com.au/wp-content/uploads/2021/05/central-coast-visitor-profile-ye-dec-2020.pdf



▲ The Art House in Wyong, a multi-purpose public building and performing arts theatre.

Initiatives such as the Smart Work Hubs in Gosford and North Wyong offer co-working spaces within the Central Coast and can reduce the number of people commuting out of the region and help manage demand on the transport system.

Transport will support the rise of the 24-hour economy by exploring the provision of appropriate transport options outside of peak hours.

## Resilient

**A transport network that is resilient to major disruptions associated with natural disasters, climate change and planned and unplanned events**

In the few years since the 2018 release of **Future Transport 2056**, the world has changed. In September 2019, a series of early season bushfires heralded the longest and most destructive fire season

in Australian history. NSW regional communities have been devastated by the impacts of drought, bushfires, floods and the COVID-19 pandemic, which in turn changed the economic landscape.

The Central Coast visitor economy has experienced notable impacts and lost revenue from the bushfires and COVID-19 travel restrictions.<sup>20</sup> The implications are clear, the regions and their transport networks must become more resilient in the face of disruptions from such extreme events.

Disruption of the transport network impacts connectivity and generates associated social and economic issues for regional communities and businesses. Network disruption takes many forms whether it be a planned disruption like a special event or network maintenance, or an unplanned disruption like an emergency, incident or extreme weather event.

<sup>20</sup> NSW Government, 20 year Economic Vision for Regional NSW (2021)

There is an increasing need for regional transport network planning to consider resilience, ensuring the safety and accessibility of the transport network for all customers. A resilient transport network is based on the principles of knowing the risks to the network, planning for disruption and taking action to minimise risk and improve recovery.

This Plan seeks to improve the resilience of the network to planned and unplanned disruptions through the following objectives:

**Objective 15** – Build greater resilience into the transport network

**Objective 16** – Utilise technology to communicate and respond to network disruptions

## Cultural Burning

The NSW Government supports the practice of cultural burning or ‘cool burning’, an Aboriginal technique for both fire management and healing and reconnecting with Country. The process involves lighting low fires in small areas on foot, with matches or, traditionally, with fire sticks. These fires are closely monitored, ensuring that only the underbrush is burnt. Night times and early mornings are ideal for these fires as nightly dew helps cool down the fire and the winds are often gentle.

Cultural burning helps to reduce the risk of life threatening bushfires, preserve the tree canopy, and restore Aboriginal kinship to the land, giving longevity to not only the land, but the people who rely on it. The NSW Government has appointed cultural burning experts on the Bush Fire Coordinating Committee.

### Objective 15 – Build greater resilience into the transport network

While planned disruptions are anticipated and prepared for in advance of the event, unplanned disruptions, such as flooding and crashes, require a dynamic response that happens in real-time. By building more resilience into the transport network, it becomes better equipped to successfully manage disruptions and minimise the impact on regional communities and businesses.

Resilience is also about providing alternative routes and modal choices. In areas with only single routes in and out, unplanned events also impact emergency services, freight, buses and evacuation routes. Providing alternatives gives the network greater resilience by allowing people to have more options during unplanned disruptions such as congestion.

Transport is strengthening networks and assets to minimise disruptions from extreme events such as bushfires and COVID-19. These events require Transport to quickly respond and adapt, while remaining focused on how to deliver for customers and communities.

Types of responses could include ensuring multiple access points for towns and regional centres, improving evacuation routes and emergency services access, strengthening resilience of key corridors to allow operations to return faster, and using fire resistant materials in place of others such as wooden culverts. Transport will:

- Invest to improve key corridors
- Focus on journey resilience to manage planned and unplanned disruptions.

### **Invest to improve key corridors**

Main spines like the M1 Pacific Motorway and Pacific Highway that provide key connectivity to and through the Central Coast have been identified for significant investment and upgrade which will increase resilience. Additional roads in and around the Central Coast to the east of the M1 Pacific Motorway are currently impacted by major storm surges coupled with high tides.

The Outer Sydney Orbital 3 investigation would see the provision of an alternative road and freight rail connection across the Hawkesbury River, providing additional transport network resilience between the Central Coast and Greater Sydney.

Transport will also increase network resilience by examining pinch points in the Central Coast. This may include parts of Terrigal Drive and Avoca Drive, Pacific Highway between West Gosford and Lisarow, and through Wyong, Central Coast Highway around Wamberal, Bateau Bay and Long Jetty, around Gosford Hospital, and around Tuggerah CBD.

The improvement of these corridors will also increase the resilience of bus and on-demand transport.

Transport will plan recovery efforts, as well as infrastructure upgrades to increase robustness of assets across the region to withstand the impacts of natural disasters and recover faster.

Decisions about infrastructure upgrades and improvements to network resilience will be informed by the NSW Critical

Infrastructure Resilience Strategy, to determine how the transport network can support responses to emergency management, evacuation and relief in significant weather events.

### **Focus on journey resilience to manage planned and unplanned disruptions**

Improving network resilience requires a combination of measures including how network infrastructure is designed through to having appropriate risk management, incident management and response procedures in place. Part of Transport's ability to build resilience and minimise network disruption is to anticipate and plan for potential disruption.

Extreme temperature events can expose infrastructure limitations such as the need to introduce speed restrictions on rail infrastructure during high temperatures. Rail infrastructure upgrades will need to consider resilience to high temperatures in order to reduce delays on the network.

Transport has been focusing on journey resilience, as opposed to simply asset resilience, taking into account multimodal choice in journeys as well as resilience associated with secondary networks that support a journey. In doing this, Transport is developing a journey resilience strategy which envisions "an agile and resilient network to reduce the impact of any future unplanned events which cause major disruptions to customer journeys."



### Objective 16 – Utilise technology to communicate and respond to network disruptions

Keeping the community informed about disruptions on the transport network empowers customers to make alternative travel plans and supports ‘real-time’ decision-making. Innovation and new technologies have the potential to benefit responders, decision-makers and the community in managing network disruptions.

Some of the key opportunities Transport will target include making better use of existing and new data sources to improve management and response to incidents, as well as new ways to communicate with customers in real-time no matter where they are across the transport network.

Transport will:

- Improve customer access to reliable, real-time travel information
- Investigate application of emerging technology and data sources

#### **Improve customer access to reliable, real-time travel information**

Transport will look to improve customer access to reliable real-time information about the transport network. This includes expanding the network of variable message signs in the region, and integration of Transport’s live traffic information with bushfire status information from the Rural Fire Service.

▲ Flooding Chittaway Bay on the Central Coast February 2020.

The Live Traffic NSW website is a key tool for keeping customers informed about network congestion and delays. During the 2019/20 bushfire season, Live Traffic usage increased by 25 per cent across NSW.

Transport will also look to increase the usage of Intelligent Transport System (ITS) infrastructure and technologies such as cameras, signal controls and automatic incident detection software to better respond to disruptions, thus adding resilience to the network.

#### **Investigate application of emerging technology and data sources**

Drones and CCTV can be used to monitor network assets and provide situational awareness for daily operations and management, to minimise the impacts of disruptions and provide more reliable

journeys. Transport is also investigating technologies to assess assets needing maintenance or replacement, to achieve more reliable, flexible, cost effective and resilient solutions.

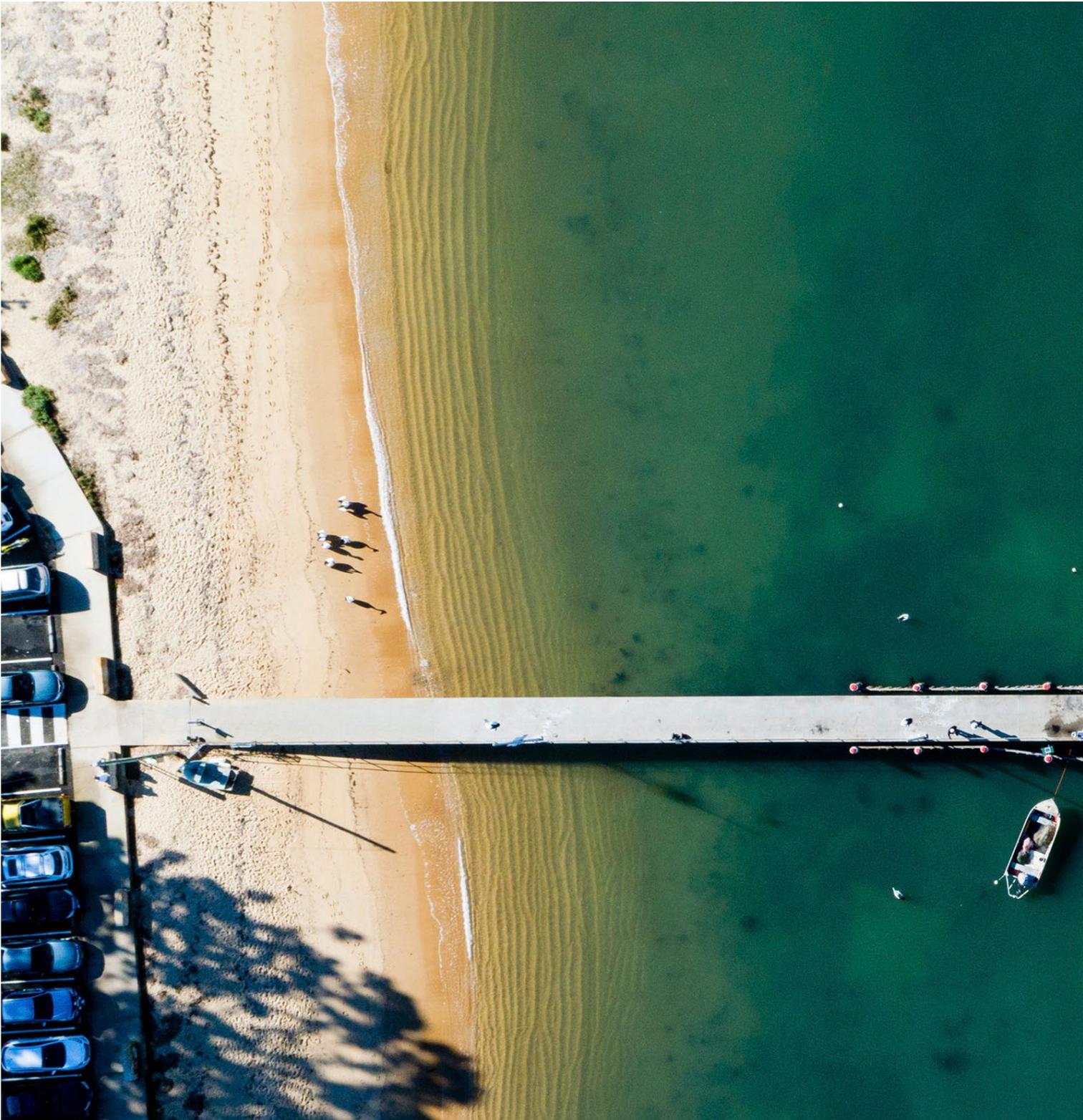
Transport will enable regional and outer metropolitan digital monitoring, with a range of sensor technologies that provide real-time transport and travel information and alerts about road incidents. In the Central Coast, this could include the use of artificial intelligence (AI) cameras, Bluetooth sensors and video analytics to alert customers of changes to their journeys as they happen in real-time.

Transport will continue to investigate new ways in which technology can be used to enable customers to make informed decisions in real-time, and respond to planned and unplanned events.



# Initiatives

This Plan has identified the key initiatives required to deliver the transport vision for the Central Coast over the next 20 years.

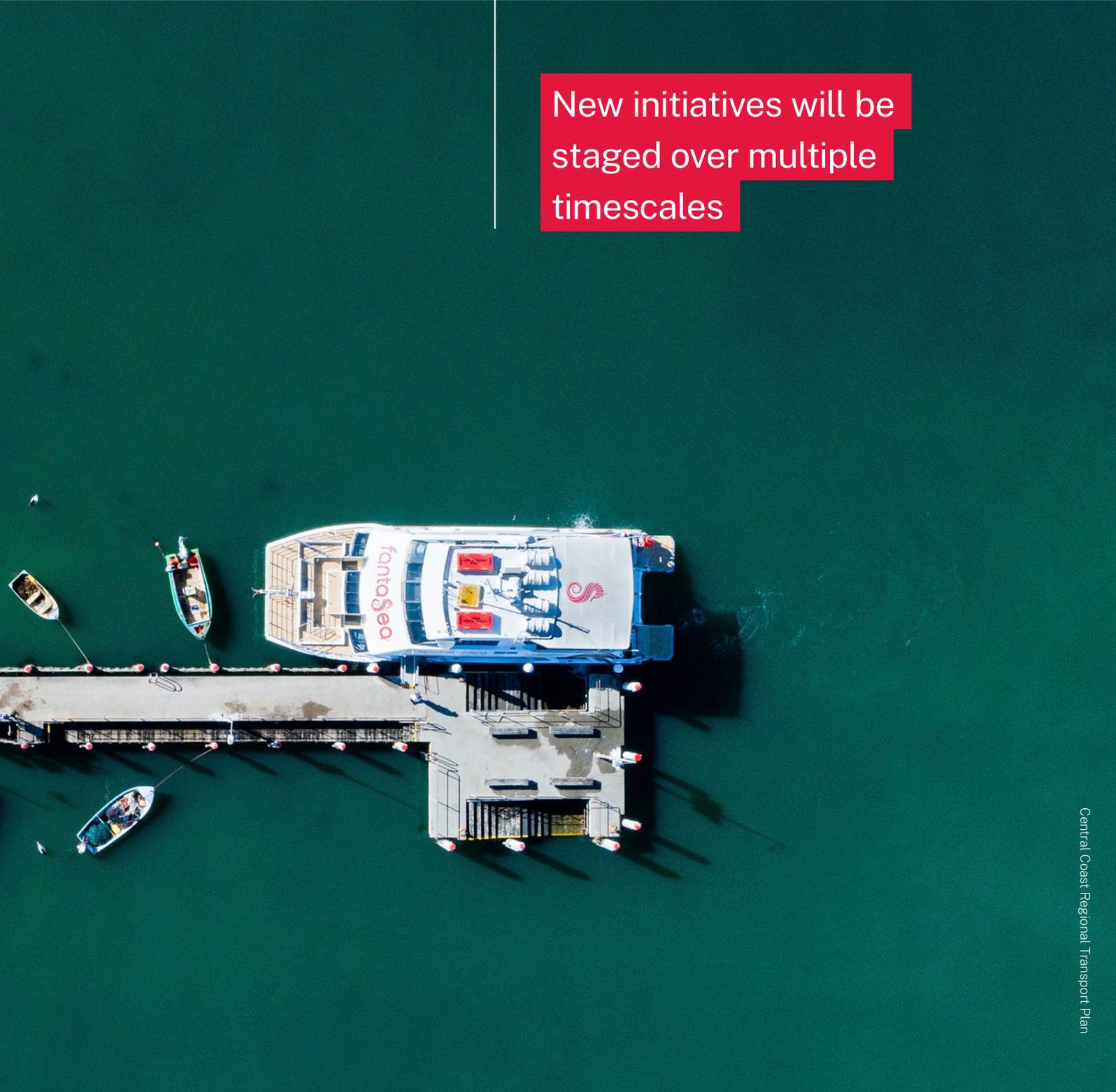


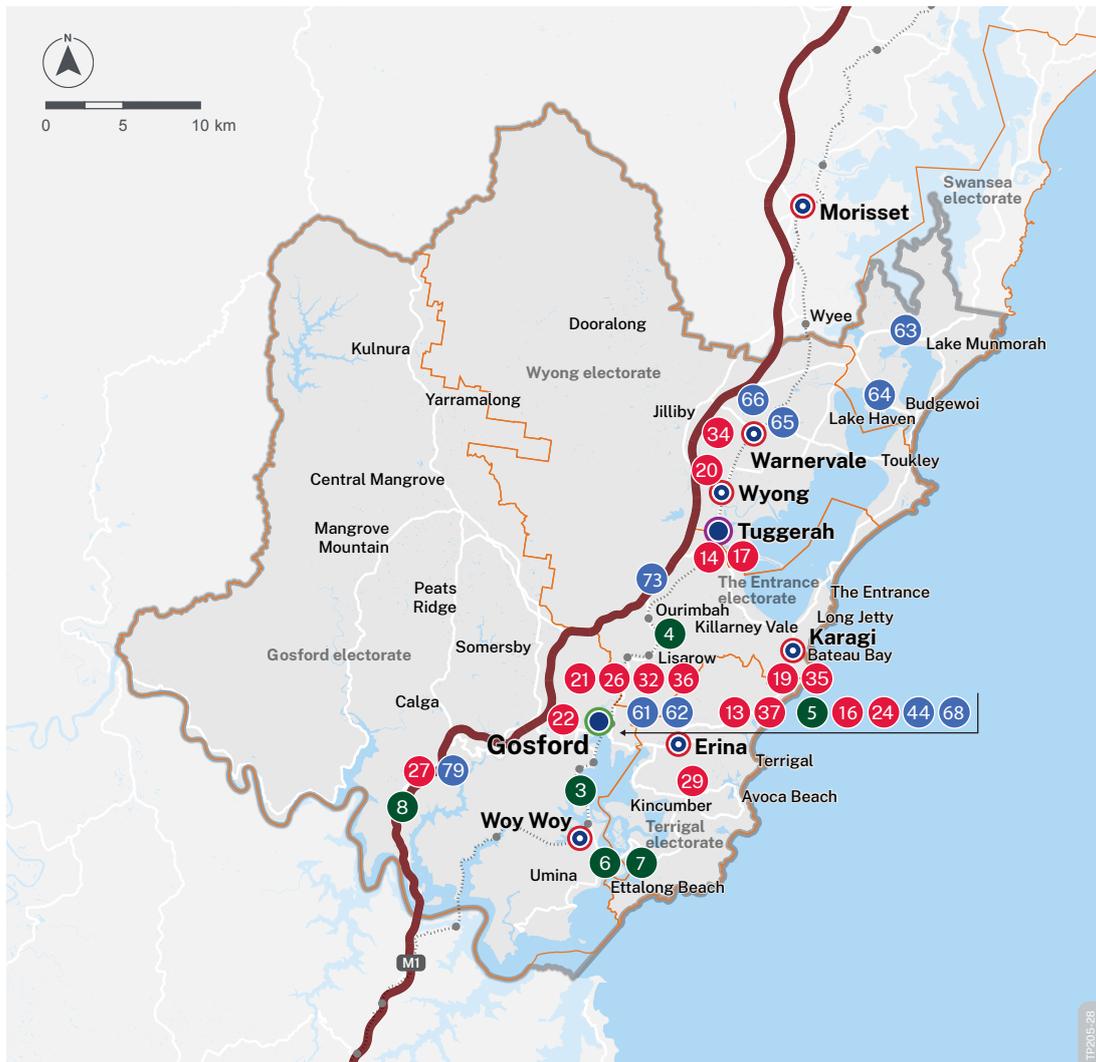
While some initiatives are already in the delivery or planning phases, new initiatives will require further investigation to determine feasibility, as well as ensure what is progressed for funding is aligned with the regional transport vision and delivers value for money for the people of NSW.

Transport will aim to commence investigations for all new initiatives listed in this Plan within the next 10 years to ensure that essential services and infrastructure are proactively delivered to meet anticipated changes in land use, population and travel demand across the region.

▼ Patonga Wharf, Patonga.  
© Central Coast Tourism.

New initiatives will be staged over multiple timescales





**KEY**

- |  |                   |  |                          |                    |
|--|-------------------|--|--------------------------|--------------------|
|  | Metropolitan city |  | Central Coast Study area | <b>Initiatives</b> |
|  | Regional city     |  | Electoral boundary       |                    |
|  | Strategic centre  |  | Railway line and station |                    |
|  |                   |  | Motorway                 |                    |
|  |                   |  |                          | In delivery        |
|  |                   |  |                          | In planning        |
|  |                   |  |                          | For investigation  |

Figure 28: Central Coast region initiatives

Transport has split the identified initiatives into three distinct categories – own, collaborate and influence. Initiatives that fall into the “own” category are those that will be led by Transport while initiatives that fall into the “collaborate” category acknowledge the need for a partnership with other state agencies, local government, industry and/or community to commence the initiative.

Finally, initiatives that fall into the “influence” category, although not led by Transport, provide an opportunity to support the delivery of the regional vision through influencing the outcome.

The following sections summarise the key initiatives by project phase (i.e. in delivery, in planning, for investigation), by time and by responsibility.

## In Delivery

Timeframe	Item	Initiative	Vision Theme	Responsibility
Ongoing	1	New trains - Mariyung Intercity Fleet	Connected, Liveable	Own
	2	New Regional Rail Fleet program	Connected, Liveable	Own
	3	Transport Access Program (TAP) upgrades at Point Clare railway station	Liveable	Own
	4	Pacific Highway at Lisarow upgrade, including new rail bridge	Connected, Safe, Productive	Own
	5	Opal Park and Ride at Gosford	Sustainable, Connected	Own
	6	Woy Woy road network improvements	Connected, Safe	Own
	7	Ocean Beach Road and Rawson Road intersection upgrade	Safe	Collaborate
	8	Audio tactile line marking (ATLM) installation M1 Pacific Motorway, Mt White	Safe	Own
	9	Safety improvements under Saving Lives on Country Roads program	Safe	Own
	10	Innovation challenges through Open Data Hub and Transport Digital Accelerator	Liveable, Safe, Productive	Own
	11	Reconciliation activities under the Reconciliation Action Plan	Liveable	Own
	12	Technological advancements under the Technology Roadmap	Liveable, Safe, Productive	Own

## In Planning

Timeframe	Item	Initiative	Vision Theme	Responsibility
0-5 years	13	Targeted intersection upgrades along Terrigal Drive between Chetwynd Road and Duffys Road	Safe, Productive	Own
	14	Transport Access Program (TAP) upgrades at Tuggerah Station	Liveable	Own
	15	Fast Rail Strategy – Sydney to Newcastle business case	Connected, Liveable, Resilient	Own
	16	Place-based Transport Plan for Gosford	Liveable, Connected	Own
	17	Tuggerah commuter car park	Connected	Own
	18	Ongoing planning to ensure servicing of new land release areas using the Bus Head Start Program	Connected, Liveable, Productive	Own
	19	Central Coast Highway and Tumbi Road intersection upgrade	Connected, Safe, Productive	Own
	20	Pacific Highway upgrade through Wyong town centre	Connected, Safe, Productive	Own
	21	Manns Road upgrade between Stockyard Place, West Gosford and Narara Creek Road, Narara	Connected, Safe, Productive	Own
	22	Corridor transport studies with DPIE to support key growth areas	Connected, Liveable, Productive, Safe	Collaborate
	23	Boating Now program initiatives	Safety	Own
	24	Get NSW Active program initiatives, including Gosford improvements	Connected, Sustainable, Liveable	Own
	25	Long-term dredging program strategic business case	Connected, Liveable, Safe	Own
26	Pacific Highway and Manns Road upgrade between Narara Creek Road and Parsons Road	Productive, Safe, Connected	Own	

<b>Timeframe</b>	<b>Item</b>	<b>Initiative</b>	<b>Vision Theme</b>	<b>Responsibility</b>
0-5 years	27	M1 SMART Motorway – Wahroonga to Gosford	Safe, Productive	Own
	28	Central Coast Rapid Bus Package – a high frequency bus network along key corridors	Connected, Resilient	Own
	29	Priority intersection upgrades along Avoca Drive at Kincumber	Connected, Productive, Resilient	Own
	30	Implementation of the Maritime Safety Plan 2026 (to be released) and the Aboriginal Maritime Safety Plan	Safe, Liveable	Own
	31	Partnership with local Aboriginal communities and Darkinjung LALC to find ways to acknowledge and celebrate Country	Liveable	Collaborate
	32	Automatic Train Protection upgrades – Narara to Tascott	Safe	Own
	33	Transition of passenger vehicle fleet to EVs	Safe, Sustainable	Own
5-10 years	34	Warnervale Link Road, Albert Warner Drive to Pacific Highway	Connected, Safe, Productive	Own
	35	Central Coast Highway upgrade between Wamberal and Bateau Bay	Connected, Safe, Productive	Own
	36	Duplication of Avoca Drive at Kincumber	Connected, Safe, Productive	Own
	37	Duplication of Terrigal Drive between Chetwynd Road and Duffys Road	Connected, Safe, Productive	Own

## For Investigation

Timeframe	Item	Initiative	Vision Theme	Responsibility
0-10 years	38	Development of a Regional & Outer Metropolitan Cycling Plan and strategic business case that identifies key cycling opportunities for the Central Coast	Liveable, Connected, Sustainable, Resilient	Own
	39	Investigation of Opal Park and Ride, carpooling, and car sharing opportunities at key locations for road and rail	Connected, Sustainable	Own
	40	Investigation of further bus servicing opportunities to align with land release areas using the Bus Head Start program	Connected, Productive, Liveable	Own
	41	Development of an EV Fast Charging Network in collaboration with DPIE, Central Coast Council and industry	Sustainable	Collaborate
	42	Development of an integrated transport network, improve the integration of bus services with the rail network	Sustainable	Collaborate
	43	Partnership with key stakeholders such as Central Coast Council to support active transport corridors and to accommodate micro-mobility solutions such as electric bikes	Sustainable, Connected, Liveable	Collaborate
	44	Partnership with major event organisers to facilitate improved access and connectivity to Central Coast Stadium and other venues during events (public transport, walking and cycling infrastructure and services)	Connected, Liveable, Productive	Collaborate

<b>Timeframe</b>	<b>Item</b>	<b>Initiative</b>	<b>Vision Theme</b>	<b>Responsibility</b>
0-10 years	45	Investigation of capacity to improve first and last mile connectivity and efficiency of freight network, such as to businesses in Tuggerah, Gosford and Wyong	Connected, Productive	Own
	46	Identification of sites for 30km/h speed zones	Liveable, Safe	Collaborate
	47	Improved WiFi digital connectivity at key transport hubs and on board services	Liveable, Resilient	Own
	48	Identification of opportunities for technology to improve heavy vehicle safety	Productive, Resilient, Safe	Own
	49	Encouraging local government to necessitate all appropriate new developments include provision of secure bicycle parking and end of trip facilities	Sustainable, Liveable	Influence
	50	Promotion of transition to electric and zero emissions fleet and freight vehicles for local council and businesses	Sustainable, Resilient	Influence
	51	Travel Demand Management strategies and precinct travel plans to encourage greater awareness and use of public transport, walking and cycling services and infrastructure	Connected, Liveable, Sustainable	Influence
	52	Investigation of opportunities for technology to improve network resilience and communicate the status of network disruptions such as Intelligent Transport System technologies	Resilient	Own

Timeframe	Item	Initiative	Vision Theme	Responsibility
0-10 years	53	Trial of zero emission buses such as electric and hydrogen-powered buses	Sustainable	Own
	54	Contingency Plans to effectively respond to unplanned network disruptions	Resilient	Own
	55	Investigation of infrastructure and service improvements to support Central Coast tourism	Productive, Sustainable, Liveable	Own
	56	Review of centre parking to promote shift to other modes	Liveable	Influence
	57	Provision of end-of-trip facilities at key trip generators including major transport and employment nodes, shopping, commercial precincts, major health precincts and schools	Liveable	Collaborate
	58	New technologies for monitoring assets	Resilient	Own
	59	Investigation of safeguarding potential corridor for Outer Sydney Orbital Stage 3	Connected, Productive	Own
	60	Targeted road access improvements to key precincts including Mt Penang and Tuggerah to support land use uplifts and increased employment, with improved safety and traffic flow	Safe, Connected	Own
	61	Improvement to Central Coast Highway between Racecourse Road and Masons Parade	Productive, Connected, Safe	Own
62	Investigation of place-based improvements at East Gosford	Productive, Safe, Liveable	Own	

<b>Timeframe</b>	<b>Item</b>	<b>Initiative</b>	<b>Vision Theme</b>	<b>Responsibility</b>
0-10 years	63	Investigation of priority Lake Munmorah intersection upgrades	Safe, Productive	Own
	64	Investigation of Budgewoi Road upgrade between Pacific Highway and Ourringo Street	Safe, Productive	Own
	65	Investigation of Pacific Highway upgrade between Charmhaven and Watanobbi	Safe, Productive	Own
	66	Investigation of duplication of Sparks Road between M1 Pacific Motorway and Albert Warner Drive	Safe, Productive	Own
	67	Investigation of M1 Pacific Motorway Ourimbah interchange upgrade	Safe, Productive	Own
	68	Gosford CBD place revitalisation, including investigation of improved connections across rail line	Liveable, Connected, Safe	Collaborate
	69	Signposting Country – investigation of dual signage opportunities	Liveable	Collaborate
	70	Provision of community-based road safety education to change road user behaviour and improve road safety	Safe, Liveable, Resilient	Own
	71	Review of bus network to ensure key destinations are well-serviced	Connected, Liveable	Collaborate
	72	Opportunities to improve service frequency on the Central Coast and Newcastle Line	Connected, Productive	Own
	73	Investigation of activation of urban growth areas	Connected, Liveable	Own

Timeframe	Item	Initiative	Vision Theme	Responsibility
0-10 years	74	Improved use of sensor technology to better understand vehicle movements and infrastructure monitoring	Productive, Resilient	Own
	75	Opportunities to integrate tourism with updated NSW TrainLink booking system	Connected, Liveable	Own
	76	Investigation of additional ferry services within the Central Coast, and connecting Greater Sydney	Connected, Liveable	Own
	77	Understanding customer experience and existing perceptions regarding public transport uplift	Connected, Liveable, Sustainable	Own
	78	Partnership with Council under the Local Government Road Safety Program to improve road user safety	Safe, Liveable, Resilient	Collaborate
10-20 years	79	M1 – Newcastle SMART Motorway	Connected, Sustainable	Own
	80	Working with Council, community and transport providers to identify opportunities for additional on-demand services, including youth specific services	Connected, Liveable, Sustainable	Collaborate

▶ Central Coast Ferries doing the commuter run on Brisbane Water.



## Draft Central Coast Regional Transport Plan 2041

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