




# WILLOUGHBY INTEGRATED TRANSPORT STRATEGY 2036

AUGUST 2020





This strategy provides  
the overarching  
framework for transport  
planning and initiatives  
across the Willoughby  
local government  
area to 2036

#### **Acknowledgement of Country**

We acknowledge the traditional inhabitants of the land on which we stand, the Aboriginal People, their spirits and ancestors.

We acknowledge the vital contribution that indigenous people and cultures have made and still make to the nation that we share, Australia.

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## Key terms

**Active transport** – A form of transport of people and sometimes goods that only uses the physical activity of a human being for locomotion (most commonly refers to walking and cycling).

**Autonomous vehicles (AVs)** – A vehicle that is capable of sensing its environment and moving safely with little or no human input.

**Electric vehicles (EVs)** – A vehicle that uses one or more electric motors for propulsion.

**Internet of Things (IoT)** – A system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

**Local government area (LGA)** – A local council e.g. Willoughby City Council.

**Mobility as a service (MaaS)** – The integration of various forms of transport services into a single mobility service available on demand.

**Modal share** – The percentage of travellers who use a particular mode of transport, usually measured for the journey to work.

**Mode of transport** – Different ways of transporting people or goods such as by road i.e. by foot, car, truck, bicycle, motorcycle, ferry, train, tram or bus.

**Open data** – Data that can be freely shared, used and built on by anyone, anywhere, for any purpose.

**Smart technology** – The use of sensors, databases, and wireless access to collaboratively sense, adapt and provide for users within the environment.

**Transport connection** – The intercept between different transport modes.

**Travel demand** – The amount and type of travel people would choose under specific conditions, accounting for factors such as the quality of transport options available and their prices. (Source: Victoria Transport Policy Institute)

**Travel Demand Management (TDM)** – Intervention (excluding the provision of major infrastructure) to modify travel decisions so that more desirable transport, social, economic and/or environmental objectives can be achieved, and the adverse impacts of travel can be reduced. The purpose of TDM is to reduce the total amount of travel, minimise the need to expand road systems, reduce the incidents of vehicle crashes, prevent further congestion, reduce air pollution, conserve scarce resources and increase the share of non-car based transport.

# EXECUTIVE SUMMARY

Transport is a complex issue facing every urban area and Willoughby local government area (LGA) is no different. We must proactively work with the state government, service providers, businesses and our communities to create a successful transport system.

*Willoughby Integrated Transport Strategy 2036* identifies the strategic direction for transport for our local area. It details how we will plan for, operate and develop our transport system into the future. It brings together a suite of studies, plans, strategies, policies and actions into an overarching document to guide transport into the future.

The transport system is about more than moving people, good and services between places. It is also about creating places, supporting services that meet customer needs and enabling a more liveable city that can cater for the changes in population.

There will be population growth in our area, consumer expectations are changing, and congestion is increasing. Technology and innovation are creating significant changes to the transport system, with the future likely to focus more on data, connection, automation and shared information and services.

This strategy acknowledges future disruptors and attempts to proactively plan for them in the context of local government. We want to be agile enough to grasp opportunities as they arise and ensure we do not create assets that will soon be outdated, or a regulatory framework that will quickly be superseded. Acknowledging the fast pace of change in the transport sector is important.

The five transport outcomes below will help us plan, manage and prepare for the future of transport in Willoughby. These align with the five outcomes of our community strategic plan (CSP), *Our Future Willoughby 2028*:

1. **Green** – Our transport system will be sustainable and promote greater levels of walking and cycling.
2. **Connected and inclusive** – Our transport system will provide excellent local and regional connectivity and be accessible to all.
3. **Liveable** – Our transport system will contribute to the development of vibrant, liveable and safe places.
4. **Prosperous and vibrant** – Our transport system will support our local economy by efficiently managing congestion and parking demand.
5. **Effective and accountable** – Our transport system will embrace smart technology and respond to community needs.

We have identified ways to measure our progress on achieving these goals and included a Table of Actions for implementation in the short, medium and long term.

The strategy will be reviewed annually, with a substantial review in 2025. This approach will enable us to respond to new data, studies and innovation in the transport sector.

# 1 PART ONE: THE TRANSPORT CONTEXT



## 1.1 INTRODUCTION

Transport is a major challenge and a complex issue in any urban environment. This strategy provides a cohesive framework for the future transport system in Willoughby local government area. It is based on community needs and the potential future of transport.

Willoughby local government area is 8.5km from the Sydney Central Business District (CBD). It includes Chatswood CBD, part of the St Leonards strategic centre, as well as smaller local centres and suburbs. It is a demographically diverse, growing, multicultural community. Its evolving centres and places lead to a complex array of transport uses and issues.

With population growth expected in future years, driving increased housing density and more jobs in the area, we need a strategic approach to optimise our transport system.

Our community has identified quality transport as a key issue. They have particularly noted the need for:

- increased and more efficient public transport
- up-to-date physical and digital connectivity
- greater variety and ease of parking options
- decreased traffic congestion
- improved sustainability and active transport options
- the development of safe and walkable neighbourhoods to promote community health and wellbeing.

For a successful transport system, we need to understand these needs in the context of the NSW Government's approach to transport and the potential of the transport sector.

# 1.2 ABOUT THIS STRATEGY

The *Willoughby Integrated Transport Strategy (ITS) 2036* provides the strategic direction for transport in Willoughby. It includes an implementation plan focused on the next five years and an annual review to maintain its currency.

The Strategy is presented in four parts:

- the planning and policy context
- the transport system
- how we plan for the transport system
- our approach for a successful transport system.

The actions and outcomes in this strategy support the delivery of our community strategic plan (CSP) *Our Future Willoughby 2028* and our community's vision for transport in the area.

The Strategy is supported by a suite of transport plans, studies and policies. It also aligns with relevant council and state government transport and land use planning strategies and approaches.

This provides an integrated transport approach that will guide transport investment, policy reforms and service provision.

Although the strategy has a focus until 2036, specific actions have been identified for the next five years. This enables us to be agile in our response to potential disruptions due to future technology and innovation. It also enables us to make more informed decisions based on new information as it emerges.

The strategy does not focus on a single mode of transport. It focuses on providing choices for our communities and an improved experience. It sets a transport approach that allows for alternative technology and innovation, irrespective of the mode.

## Community engagement

Through various engagement activities, our communities have told us that transport and traffic issues are a priority. This strategy has been developed with input from our CSP, land use planning strategies, community perception survey, wellbeing survey, and research workshops with stakeholders.

## Implementation and review

Given the pace of technology and innovation changes and the potential for disruptors in the transport sector, identifying actions in detail to 2036 is not realistic.

This Strategy uses the information we have available now. Any future decisions will be based on developing and refining this in light of new information.

Annual reviews of this strategy will ensure any transport initiatives respond to future development, infrastructure provision, changes in use, community needs and trends, technology changes and better practice.

These will also provide the opportunity to:

- advance initiatives
- hold initiatives to gather more information or rethink our approach
- rethink initiatives if they do not deliver the intended outcomes.

In addition to an annual review to ensure it aligns with the annual operational plan, a substantial review will take place when the CSP is next reviewed in 2024.



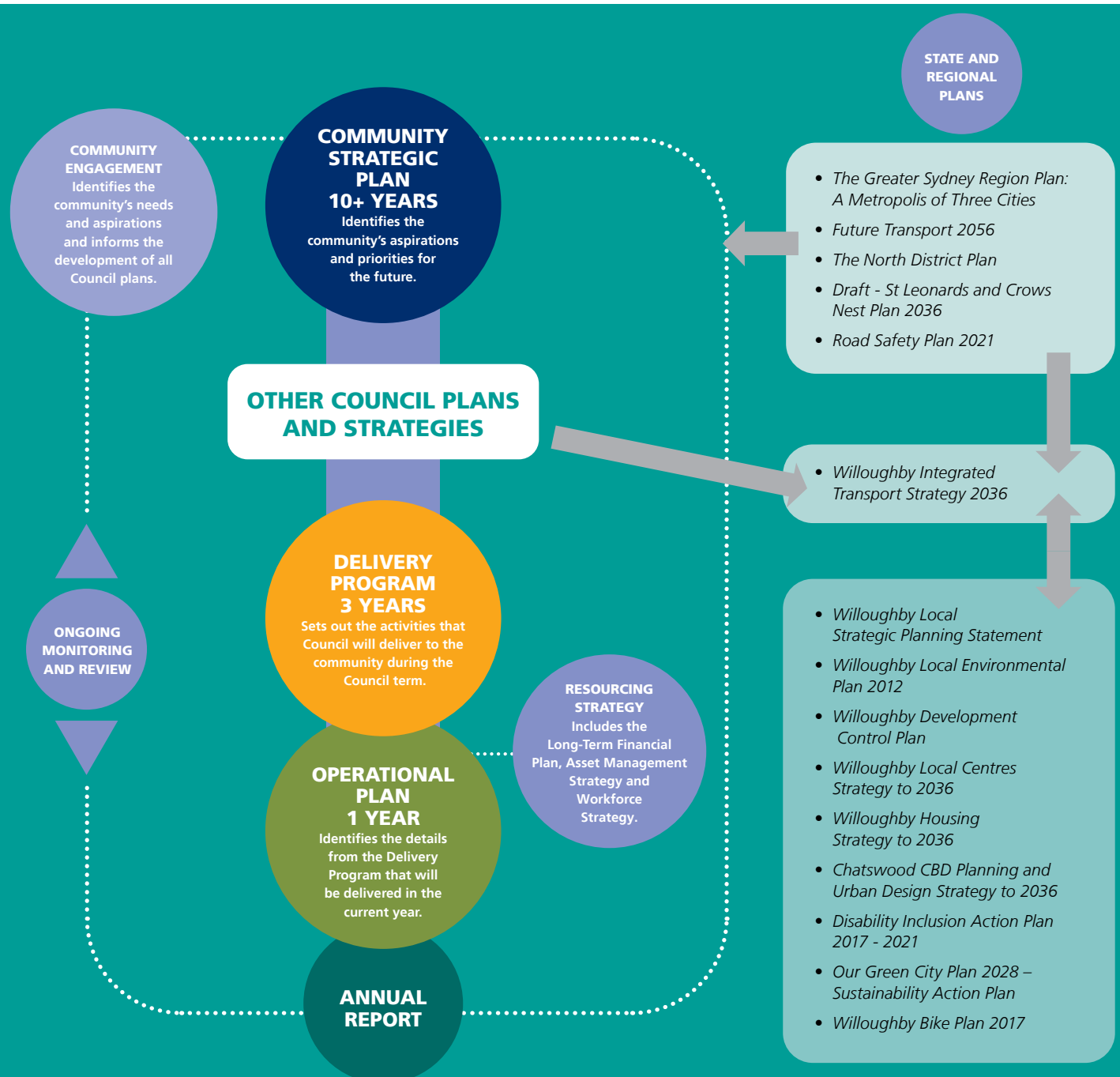
## 1.3 POLICY AND PLANNING CONTEXT

This strategy is one element of our future planning. A range of strategies, policies and plans guide its approach and support its implementation.

### The integrated planning and reporting framework

The strategy sits within the framework of policies and planning required by council and the state government. See Figure 1.

**Figure 1: How this transport strategy connects to the NSW Government's integrated planning and reporting framework**

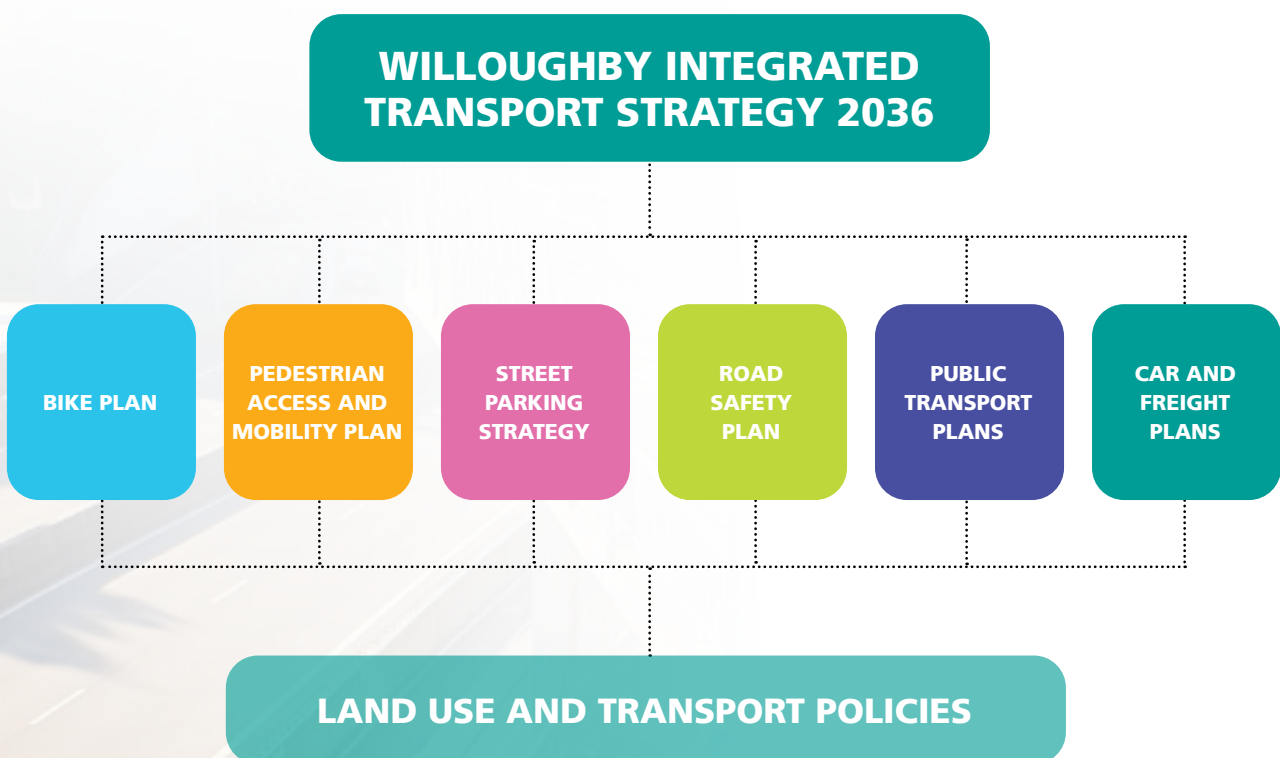




## Supporting documents

This strategy is supported by the transport specific strategies, plans, policies and studies shown in Figure 2.

Figure 2: Integrated Transport Strategy documents



## 2 PART TWO: THE TRANSPORT SYSTEM



# 2.1 A COMPLEX TRANSPORT SYSTEM

Our transport system is complex and relies on many stakeholders for its success. In creating a successful transport system for Willoughby local government area, we need to consider a range of factors, develop benchmarks for success, and remain aware of our level of influence and control.

The transport system includes the physical network and facets such as technology, land use, place and operations. It provides public and private transport options to transport people and goods in the most efficient way possible. See Figure 3.

The system consists of many modes of transport, such as motor vehicles, buses, trains and bicycles. These support a range of users, including pedestrians, cyclists, public transport users, car and freight/delivery drivers.

The Willoughby area is important as a transit location and as a destination in its own right. Its strategic importance is reflected in current transport infrastructure: Sydney Metro, T1 North Shore Line trains, major bus routes connecting to regions and

centres, and Chatswood transport interchange. Major state roads include Pacific Highway, Gore Hill Freeway, Boundary Street and Fullers Road for freight and cars.

Figure 4 shows an overview of the local government area, highlighting existing rail stations, traffic generators and local centres.

The Willoughby transport system does not operate in isolation to the system across Greater Sydney. The infrastructure, challenges and opportunities are often interconnected. We also rely on state government, private providers and other councils to improve the overall transport system.

The area has seen recent and proposed state investment in transport infrastructure projects, shown in Figure 5. These include NorthConnex, Sydney Metro City & Southwest and the Western Harbour Tunnel and Beaches Link. Some of these projects are not in the local government area but have related benefits or impacts on our transport system.

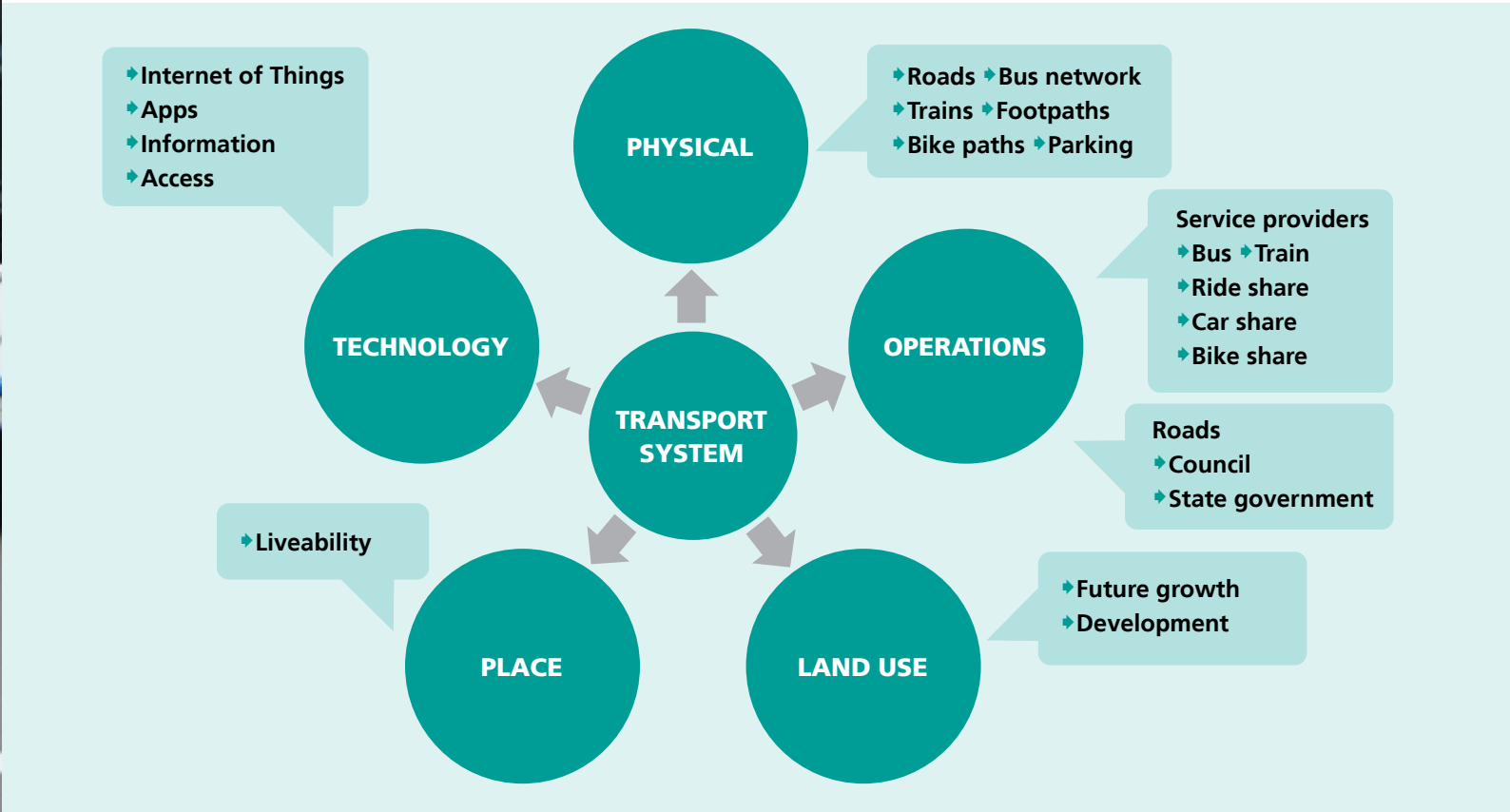
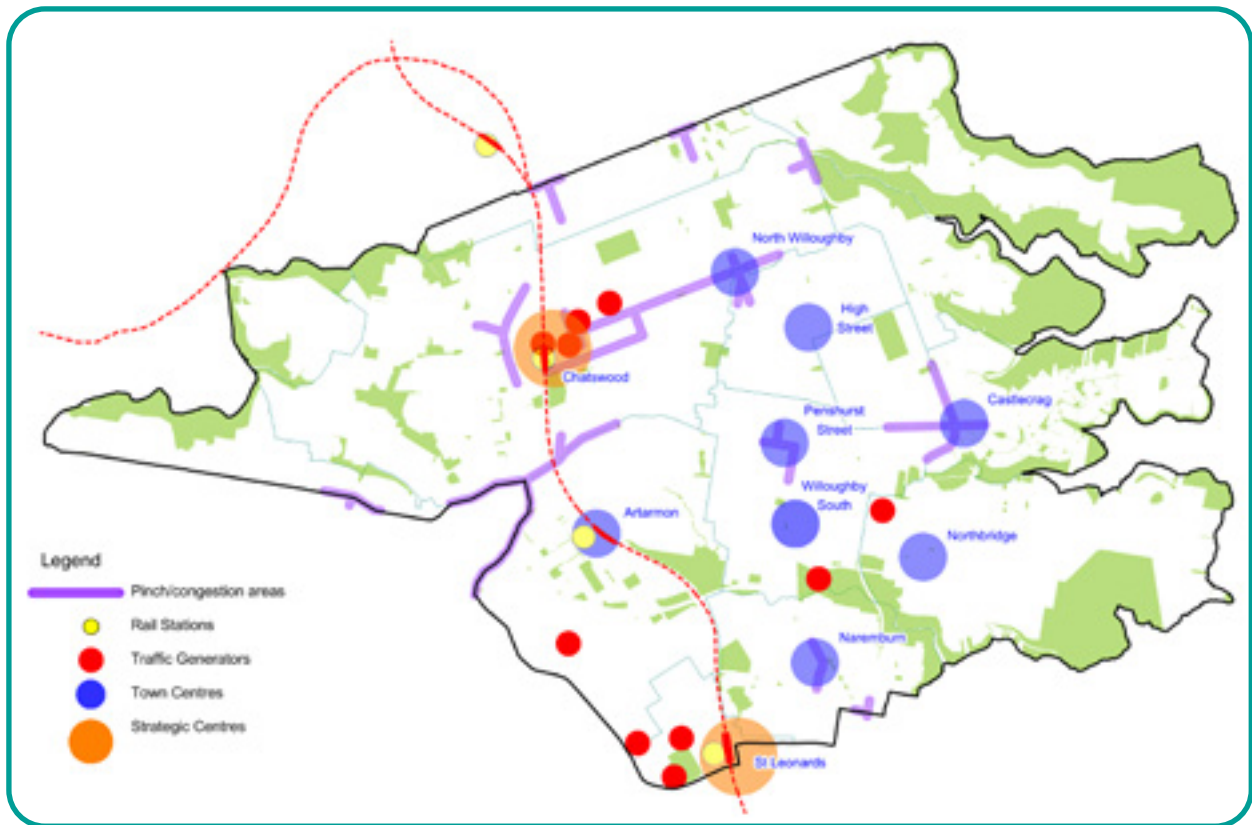


Figure 3: Overview of transport system

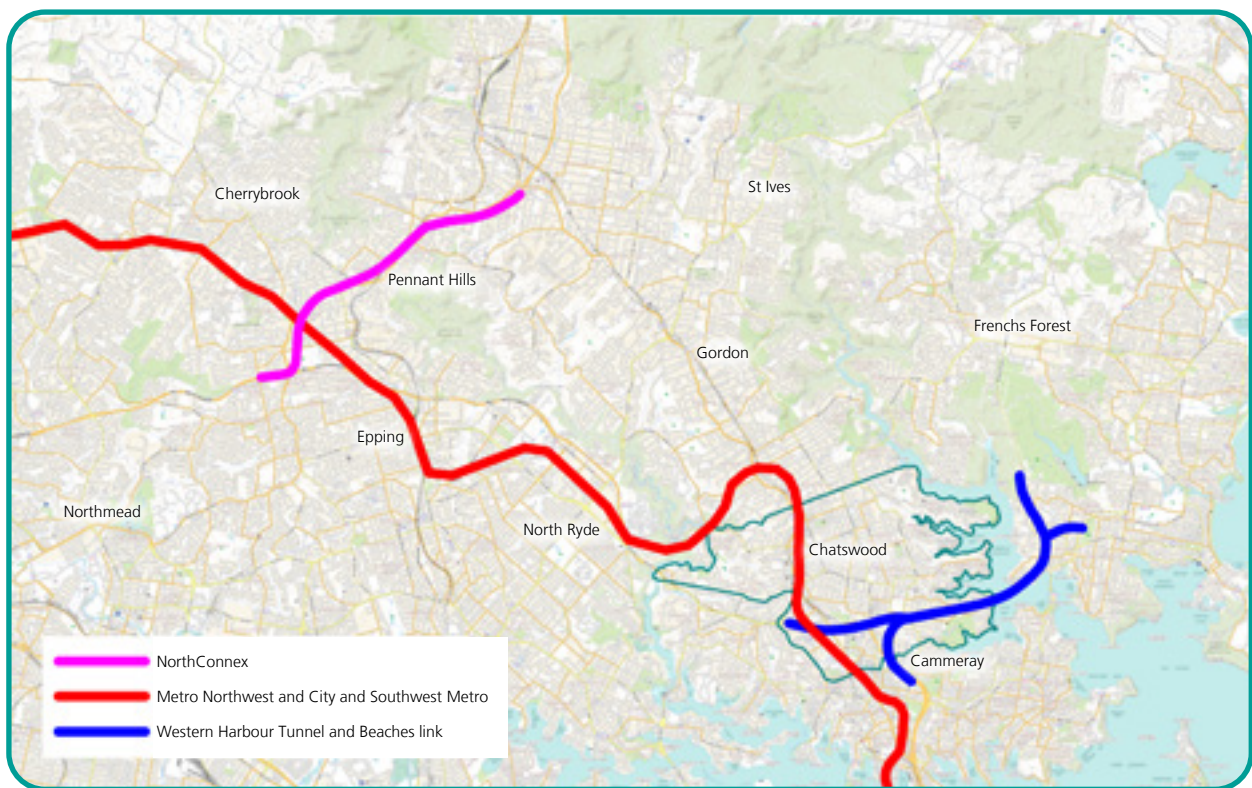








**Figure 4: Overview of the local government area**



**Figure 5: Major NSW Government transport projects**

Source: Transport for NSW

# Snapshot of our current transport system



3 rail stations - Artarmon, Chatswood and St Leonards.



Around 20 bus routes from Chatswood interchange alone.



A regional and local road network of 211km.



A pedestrian footpath network of 188km.



A bicycle network of existing and planned routes of 153km.

## What a successful transport system looks like.

A successful transport system:

- provides accessible choices and links
- focuses on customer satisfaction including service provision, ease of use, reliability and safety
- is efficient and provides timely delivery and value for money
- is environmentally sustainable and promotes community health and wellbeing
- uses multiple modes and provides ancillary services
- uses data to improve travel decisions
- uses innovation and technology to support the system
- provides a comprehensive and harmonised land use and transport system
- meets legislative and policy obligations.



# 2.2 FACTORS TO CONSIDER WHEN PLANNING FOR TRANSPORT

Many factors need to be considered when planning for a successful transport system. We understand the current pressures and the outcomes our community wants. But we do not know what the future holds given the pace of change in the sector and the potential for disruption. Remaining agile will help us create a transport system that caters for future possibilities.

Current pressures, community needs and potential risks need to be examined when planning transport policies, managing operations, and developing infrastructure projects and new services.

This section summarises the key factors we must consider. Some of these we can influence, some we can control, and others we can only respond to.

## Managing risks in the system is essential

Risks come in many forms and we can respond in many ways.

### What we know

Proactively managing risk is essential. If we do not manage risk in our transport system:

- there will not be sufficient infrastructure to serve the needs of the growing population
- the liveability of the area and community health and wellbeing will be negatively impacted
- environmental impacts will continue to grow
- there will be insufficient resourcing to address future needs
- investment into the area will decrease
- economic growth and productivity will stagnate or decrease
- ongoing issues will be exacerbated.

Figure 6: Factors challenging our transport system



## Our community prioritises choice and connections

The Transport for NSW Customer Satisfaction Index (May 2018) shows that most respondents in the Willoughby LGA had a very high satisfaction rate with public transport services at 86% overall. The associated Customer Satisfaction Roads Index shows 75% overall satisfaction.

Understanding our community's priorities for transport, and their satisfaction with transport services and infrastructure, is essential for future planning.

### What we know

Our surveys and research have highlighted various perceptions of transport issues in our communities.

Themes in these responses include:

- Traffic is the 'biggest challenge' about living in Willoughby LGA and traffic and parking had very poor perceptions of service.
- Choices and connections are the priority, followed by parking and traffic, safety, security, cleanliness, healthy lifestyle and digital services.
- Detractors of Chatswood include crowded / busy and too much traffic / hard to get to.
- Current parking and traffic issues are important elements to be addressed.
- Older residents are not satisfied with access to public transport. They have limited access to a car and some do not feel safe walking in the day or at night.

Peninsula suburbs on Middle Harbour (Castle Cove, Middle Cove, Castlecrag and Northbridge) have either limited access or direct connections to public transport.

Older and young portions of the population have different needs around transport.

## Our area will see population and visitor growth

The anticipated growth of the Willoughby local area will have significant impact on transport services and infrastructure. It will require a collaborative effort from a range of stakeholders.

### What we know

Population projections for our area are significant:

- Our estimated population is 91,418 in 2036, a 20% increase.
- Households will increase to 35,688 in 2036, a 23% increase.
- A further 10,600 jobs are planned to be created with 30% of residents employed locally by 2036.
- Anticipated growth is over the current 20 million annual shopper visits to Chatswood, with a significant increase to Chatswood Chase shopping centre by 2025.
- Growth will focus in the Chatswood CBD and, to a lesser degree, other local centres.

This growth will require some infill development as well as the development of local centres. This can lead to pressure on existing infrastructure and services, unless appropriate land use planning is in place.

Trends show that medium and high density housing in 1999 made up 30% of all housing, compared to 55% in 2019. This is projected to reach over 70% by 2036.

- The Greater Sydney Commission's five-year target to 2021 for increased housing supply in our local government area under the North District Plan is 1,250 new dwellings.
- Our Housing Strategy goes further to project that 6,000 to 6,700 new dwellings will be required in response to growth.

## A good strategic transport position

Willoughby's strategic transport position is an advantage to support sustainable growth.

### What we know

Chatswood and St Leonards are two of a number of strategic centres recognised by the state government. They have proximity and good connections to Sydney's other strategic centres.

The Willoughby LGA is connected to public transport, particularly Chatswood interchange, a major transport hub for trains, buses and taxis.

Our location in the Eastern Harbour City and part of the Eastern Economic Corridor, as recognised by the Greater Sydney Commission, provides opportunities for strategic influence.

The state government's vision of a 30-minute city is a city where people can conveniently access jobs and services within 30 minutes by public transport.

Increased visitation and use also enhance challenges, such as congestion, in our area.

- Data from ABS 2016/17 highlights that the trip length, in terms of commute and change mode of travel, is the highest ranking factor for users looking at travelling into/out of the Willoughby LGA. Accessing the Chatswood CBD via Interchange is a strategic travel destination.

## An effective transport system supports economic growth and productivity

Economic growth and productivity in any city is vital in supporting local communities and businesses and attracting investment. This can be heavily impacted by the transport system.

### What we know

The Willoughby local government area is performing well economically:

- The unemployment rate in the local government area is 4.06%. This is lower than both NSW and Greater Sydney (2018 June quarter).
- There were more jobs than resident workers in 2017/18.
- Chatswood is the 6th largest office market in metropolitan Sydney.
- Chatswood is a significant retail centre with Chatswood Chase Sydney and Westfield Chatswood.
- Willoughby is ranked 14 across 88 local government areas for core night-time economy establishments density per km<sup>2</sup>, with 587 establishments.
- The value of tourism in 2016/17 was \$883m, with Willoughby contributing 3.2% to the NSW tourism economy.
- Gross Regional Product is \$11.39b per annum (year ending June 2018) and 1.9% of the NSW Gross State Product.

In 2017, there were 12,427 businesses in the local government area, with the largest industry being health care and social assistance. Most businesses are located in Chatswood, St Leonards and Artarmon.

The area supports regional and statewide economic development with freight through traffic.

The economic output of the Eastern Economic Corridor is expected to grow by 30% in the next 20 years.



## We must reduce the environmental impacts of transport

The environmental impacts of transport need to receive a greater focus to improve health and liveability for our local community, the natural environment and sustainability of our resources

### What we know

One of the main sources of air pollution in Sydney is car emissions, with smaller hybrid and electric vehicles offering the greatest abatement potential.

Electric vehicles (EVs) generate no CO<sub>2</sub> emissions directly from their operations. But they cannot be considered zero emission vehicles unless their batteries are charged from renewable energy sources and their design and construction phase emissions footprint is minimised or offset.

Active transport and public transport are more environmentally-friendly options, producing less emissions than cars, requiring less infrastructure and with less impacts during construction. Encouraging the use of these modes of transport for short trips reduces car dependency and greatly reduces negative environmental impacts.

- 2016 saw a decrease in car use of 4.5% from 2011, with 40.1% of people getting to work in a private vehicle (truck, car, motorcycle).

## We need to adapt for work and lifestyle changes

Changes in societal thinking, activities or approaches to lifestyle can greatly influence the type of transport services required.

### What we know

Greater use of smartphones and access to the internet has changed the speed and way in which people access information.

There is more interest in active and healthy lifestyles and increased access and participation in community events and recreational activities.

Awareness of sustainability and environmental issues and use of public transport and ride sharing is increasing.

More companies provide flexible work arrangements such as virtual workspaces, different hours, working from home and various location options.

An ageing population often requires more access to a range of affordable, safe and dependable transport services.

A focus on increasing the night-time economy, will likely lead to an increased need for more dependable and frequent services in the evening.

More people are shopping online, which may somewhat reduce congestion and parking pressures at major shopping centres, but it also create a new type of traffic – delivery vehicles to deliver orders directly to customers' homes.

- In Willoughby 6.2% of workers worked from home in 2016 compared to 4% in greater Sydney. This was a small increase from 2011.

## New technologies can support us

Innovation and technology connect information and people and can support automation. They support faster, better quality, more accessible and affordable services and infrastructure that improves the customer experience. The fast pace of technology and sharing data will continue to play an important role in transport planning and services.

### What we know

Connection to internet and data provides many opportunities:

- The Internet of Things (IoT) is already embedded in our way of life and will increase.
- Access to Wi-Fi in public spaces provides improved access to information.
- Open data may lead to innovative transport solutions.

5G technology is currently being rolled out, increasing speed and responsiveness that in turn supports technology and innovation advances.

Active and intelligent transport facilities are available now. Examples include parking guidance and management, all day real-time delivery of goods, ridesharing/ridehailing services and bicycle couriers and on-demand buses.

Intelligent transport systems use data and technology to connect components across the city and improve liveability. They can provide real-time information such as system demands, vehicle patronage and vehicle monitoring. This can assist in managing transport issues.

Electric and hydrogen powered vehicles (including e-bikes) are increasing. Car sharing and bicycle sharing systems are already a significant option.

#### Examples of historical disruptors:

- Ford Model T
- digital camera
- downloadable and digital music
- LED lighting

New technology being developed and trialled elsewhere includes:

- hyperloops delivering people and freight quickly through a high propulsion tube with no direct carbon emissions
- autonomous vehicles
- drones for delivery of services and goods
- mobility as a service (MaaS)
- shared ownership models

By 2040, it is predicted that four out of every 10 vehicles on the road will be autonomous (Accenture Digital 2014: The Road to the Future).

## Disruptors - we must remain agile

Disruptors are unknown elements that lead to significant change. This can include things such as natural disasters, pandemics but also new technology. They are a key challenge when planning for future transport.

The success of disruptors depends on elements such as:

- rate of technology advancement
- alignment to government policy
- availability of suitable infrastructure
- ability to work on a large scale
- accessibility to customers
- the cost for the owner and customer
- product quality
- how it improves on current options.

The COVID-19 pandemic has demonstrated the need for the transport system to be agile and have the ability to withstand disruption. It remains to be seen whether the pandemic will result in significant and permanent change to our transport system and how we travel. Nevertheless, being prepared and agile enough to pre-empt or respond to disruption will help us create a transport system that caters for future possibilities.

### 3 PART THREE: HOW WE PLAN FOR TRANSPORT





## 3.1 UNDERSTANDING OUR CUSTOMERS AND STAKEHOLDERS

Planning for transport is complex and requires an understanding of data, trends, needs and behaviours. Integrating policy frameworks with land use planning is important. The importance of behaviour over infrastructure and a focus on user experience is core to a successful transport system.

Customers and stakeholders are those who use, rely on, create or support the transport system.

### **Our customers demand quality and we can influence their experience**

Customers use the transport system and they demand quality. We have limited control over the significant changes in technology, operations and demand. But we have greater influence over the customer experience.

### **We have multiple stakeholders**

Stakeholders may use, enable or influence the transport system. They include:

- transport users – pedestrians, cyclists, public transport users, car and freight/delivery drivers
- residents and visitors
- businesses that rely on transport services and technology for goods and customers
- developers who create transport infrastructure and places
- transport providers that provide services, companies and drivers
- all levels of government that create transport infrastructure and services, develop legislation and policy or operate services.



## Understanding reasons for travel will help us respond to customer needs

If we are to address the needs of all customers, we need to understand the reasons for their transport uses.

These reasons include:

- as a destination, shop, entertainment or visit
- goods and services
- travel through
- recreation
- commuting
- creative 'high quality of life' communities
- deliver goods and services
- work.

## We know:

- congestion and parking are key issues
- use of public transport increases when living close to a railway line
- more people are using bicycles and public transport to commute to work
- the top reasons for trips were work, social / recreation and shopping.

As a local government agency, our transport planning must focus on providing customers with access to various modes of transport, connecting those modes either physically or virtually and providing options. This will improve the customer experience regardless of changes in infrastructure, modes of transport or technology.

This approach relies on having:

- the right infrastructure to support the different modes
- the right information to assist the customer in knowing their options.

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We also need to understand in detail the needs of more vulnerable members of our communities, such as children, older people and people living with disability. This will help us provide improved access, choices and customer experience.

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THE GREAT NORTHERN HOTEL

CHATSWOOD

MOWBRAY RD  
Willoughby

PACIFIC HWY  
Hornsby

LIQUOR  
Bottle Shop

## 3.2 UNDERSTANDING THE DATA, INFORMATION AND KNOWLEDGE

Data provides the foundation for what we know. It helps identify how to provide the best solution for a liveable city and increase value in a place.

This data is valuable:

- travel behaviour
- benchmarking to predict future behaviour and impact
- better practice
- guidelines and studies
- customer feedback
- population and land use analysis
- travel demand and network modelling
- travel demands and performance
- road safety performance
- existing maximum carrying capacity of transport systems
- frequency of exceeded capacity.

## 3.3 FOCUSING ON BEHAVIOUR AND SERVICES RATHER THAN INFRASTRUCTURE

Building more infrastructure is not always the solution. Focusing on changing behaviours and improving services to use what we have more efficiently is a more financially and environmentally sustainable option. This is a priority in achieving a more successful transport system and improved customer experience.

Some simple changes in behaviour that minimise travel times and influence the system are to:

- use different routes
- access options at different times of the day.
- use more sustainable options of shared paths or public transport
- plan trips considering current travel times.

Ecommerce Australia (2019) predicts that by 2020, 1 in 10 items will be bought online.

76.6% homes in Willoughby local government area had an internet connection in 2016.

Open data is where data from many providers can be freely used, shared and built by anyone. It supports effective technology for improved transport solutions.



# 3.4 PREPARING FOR THE FUTURE

Preparing for the future of transport is preparing for the unknown. We need to consider learnings from the past, understand the immediate pressures faced by transport providers and infrastructure providers, and understand the future disruptors that may change the face of future transport.

Planning for transport over a long period at the local government level is challenging. We rely on the integration of planning policies and strategies at state and federal government levels, as well as the private industry for infrastructure and operations.

Recent innovations in transport are likely to place us on the precipice of significant change to the industry.

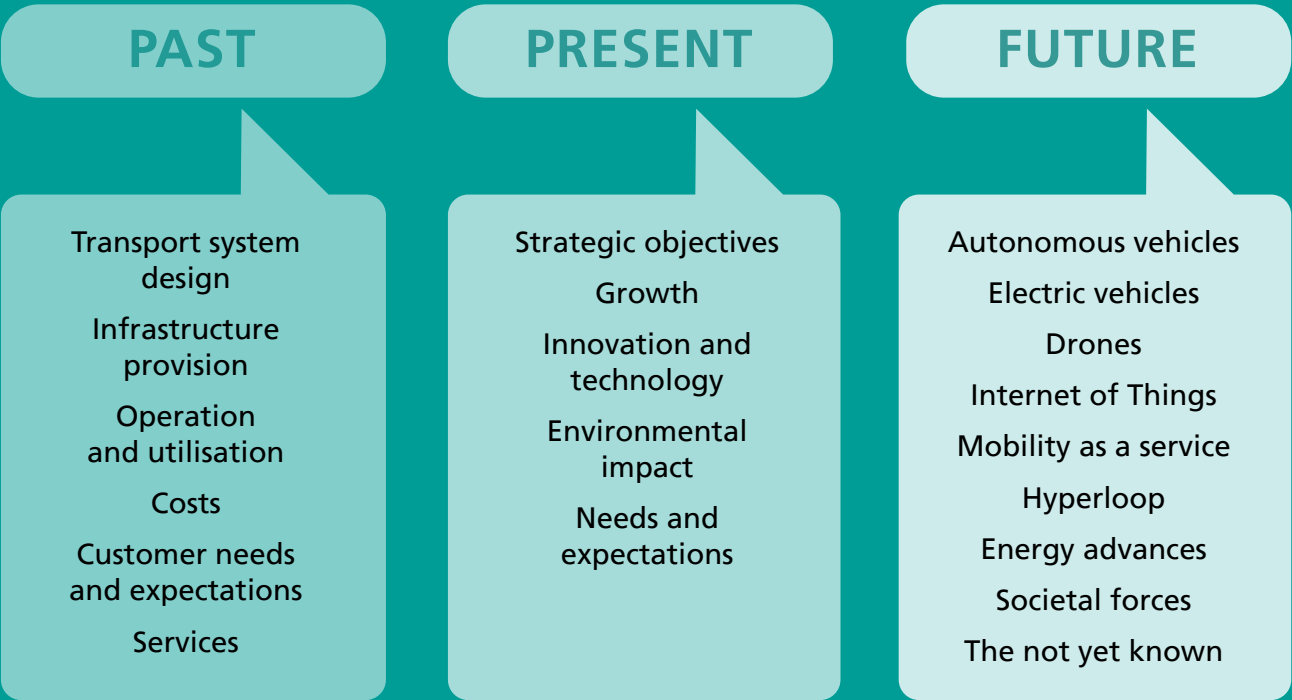
Understanding and responding to this will help futureproof our approach.

Disruptions occurring soon are usually easier to predict. However unexpected ones such as the recent COVID-19 pandemic are harder to predict. Disruptions taking place ten years from now are much harder to plan for and, but may have greater impacts. Nevertheless, we must build an awareness of the trends, technology, vulnerabilities and commitments needed to transform our transport system.

Some past learnings influence the present drivers and the disruptors change the future. See Figure 7.

We cannot use known solutions alone to address future problems

Figure 7: Factors for future planning



## 3.5 INTEGRATING WITH LAND USE PLANNING

Integrating transport with land use is critical to ensure the highest levels of connectivity. Understanding the relationship between movement and place helps create healthy built environments where people can move around with ease and comfort. Successful integration can reduce the number of trips and congestion, help to create great places, provide alternative travel choices in emergencies and improve the overall travel experience.

Developing policies and processes for development that complement sustainable transport outcomes is essential. Examples include co-locating development with key transport nodes to increase the use of public and active transport such as walking and bike riding. This also supports the 30-minute city concept - where home and work are close to public transport - and it supports vibrancy in our communities.

### Using the Movement and Place Framework

The NSW Government Architect's Movement and Place Framework, (refer see Figure 8), recognises that streets perform multiple functions, transporting people and goods as well as being places and destinations for people. The framework attempts to manage these competing demands and focus on the user.

Balancing the creation of places and the movement of people or goods is challenging but necessary, particularly where the consideration of place drives the development of our transport systems. We will achieve

this by working with our communities and movement and place practitioners to ensure transport systems that better support our places. The movement and place framework will help us find this balance.

It is important to find a balance between a movement corridor where the focus is on minimising travel time and keeping people and goods moving, versus a destination which aims to increase visitor dwell time. Using this framework when planning for individual streets across the Willoughby area will help create liveable places and provide the right transport modes in the right locations at the right time.

Aligning movement functions with the places they serve ensures our transport networks and public spaces better contribute to the liveability of our communities and the productivity of NSW.

Related to the concept of movement and place is the idea of 'complete streets' and 'shared streets'. These streets are designed to take into account the needs of all road users - pedestrians, cyclists, motorists, public transport users and freight/delivery drivers. They allow safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Streets with a high 'place' value can be redesigned to become complete or shared streets to better accommodate the needs of all users, not just motorists.



## The Movement and Place Framework

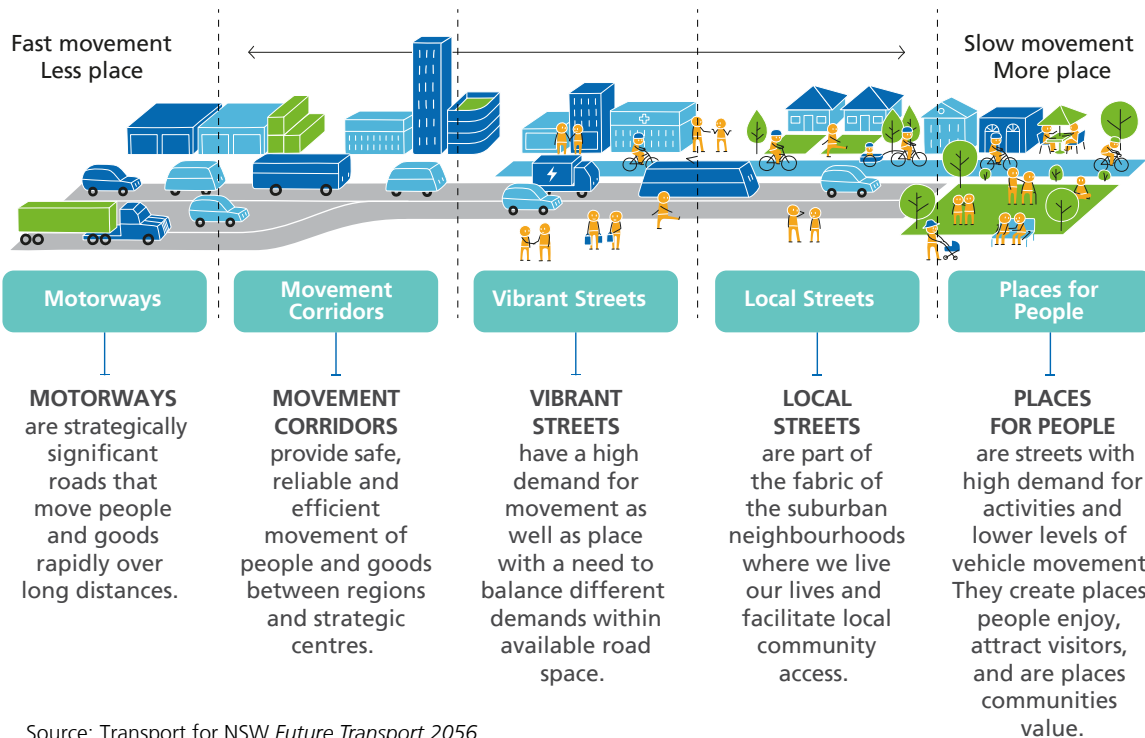


Figure 8: Movement and Place Framework

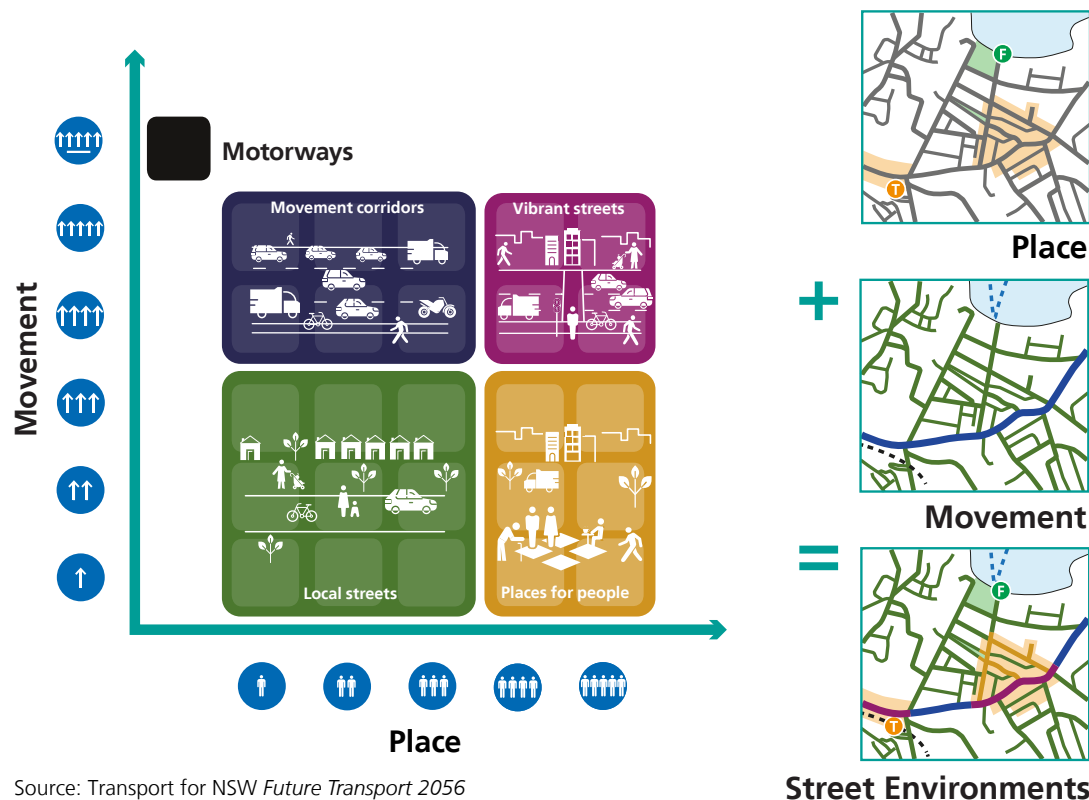


Figure 9: Example of the movement and place framework



## 4 PART FOUR: OUR TRANSPORT APPROACH



### 4.1 THE OVERALL FRAMEWORK

We have aligned this strategy with issues raised by our communities when developing our community strategic plan, (CSP) *Our Future Willoughby 2028*. This has driven the development of the transport strategic directions, focus areas and actions in this section.

We have also considered the CSP's overarching vision that Willoughby's diversity underpins our liveable and prosperous City.

The CSP's future aspirational statement for transport is:

'It is easy to get around our city. Public transport options, connected walkways and cycle paths help minimise the impact of cars on our roads and provide us with healthier choices. The connections between the CBD and our villages are strong, creating liveable spaces which support our needs and serve as meeting places. Digital connections and infrastructure support a smart city that provides real time information to people seeking to navigate our city and access its services.'

The following pages detail our transport directions, strategies, measures and actions

## Understanding our transport strategic directions, focus areas, ways we will measure and actions

The **community strategic plan (CSP) outcomes** support our community's overall vision for the Willoughby LGA.

In this strategy, the **transport strategic directions** are a direct response to the CSP outcomes as applied to transport.

The **focus areas** have been formulated as a response to community feedback. They serve as a link to the various actions proposed and translate the strategic directions into easily understood and classifiable themes.

The **examples of ways we will measure** will help us track our progress. They have been identified based on the data we have available to measure. Particular projects may have specific ways of being measures.

Finally, the **transport actions** identify the specific actions we will take to progress this strategy. A summarised action plan is contained in Appendix 1.

## Transport actions and funding sources

The actions in this strategy are a mix of infrastructure, services or behaviour solutions.

They do not include business-as-usual activities, existing projects, or those we have already identified.

Examples of ongoing business include:

- assessment of traffic / transport requests
- management of the Willoughby Traffic Committee
- review of fees and charges
- annual footpath maintenance and replacement program
- annual road maintenance and replacement program
- annual cycleway construction program
- requests for traffic signs
- management of transport permits, parking schemes.

Many of the actions identified require studies, planning and concept development, meaning we need lead time before any infrastructure work progresses.

The action plan identifies high level costs and sources of funding for each action. Some actions have not yet secured a funding source. Funding sources may include:

- Willoughby City Council
- state or federal government grants
- voluntary planning agreements
- Section 7.11 and Section 7.12 developer contributions
- businesses.

## Working with others to realise benefits

The transport system is complex and has many stakeholders involved in providing infrastructure and services, and in planning and policy, as well as users.

Many actions are the responsibility of others. We can advocate and partner with them on providing outcomes, particularly for transport services and large infrastructure solutions.

We need to work with other partners to implement actions, source funding and create changes. These include:

- state and federal government.
- private providers of services.
- community groups.
- businesses.
- peak bodies.

A strategy summary is in Figure 10. The following pages detail each transport strategy, what we know about it, the initiatives we are working on and future initiatives.



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Underpinned  
by our principles:  
sustainability  
social justice  
ethical governance





Figure 10: Strategy Summary



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Our transport system  
will be sustainable and  
promote greater levels  
of walking and cycling

## ITS STRATEGIC DIRECTION 1

Andrew looked at 6-down again in the morning crossword. A 10-letter word for “blocked with nowhere to go”. He put it down and turned his attention to his emails just as his car turned off the M1 at Wahroonga and headed south to the city along the Pacific Highway. He was surrounded by other autonomous vehicles all travelling in perfect harmony, linked to each other and the road management network system like a giant invisible spider web. Each car’s sensors relayed its data to the surrounding cars and the network so each car anticipated vehicle movements ahead and compensated in the most efficient method. As a result, the speed camera at Knox Grammar had been removed years ago. There was little need for it when 95% of cars on the road were controlled by the system.

Andrew was a creature of habit and still liked to sit in the ‘drivers’ seat but he could sit back and relax or get work done now on the way to the office. He knew that in a minute or two they’d pick up Bill in Turramurra. Bill worked with Andrew and they coordinated through their app to ensure the same AV picked them up each day. They’d have 15 minutes in the car together to discuss work matters before picking up Sally. Neither Bill nor Andrew knew Sally other than as a car share passenger but they all got on so well that picking up Sally was locked in and they all travelled together. Once Sally got in, the three of them would probably enjoy a more social discussion.

Sally, as always, was lively and joined the conversation the moment she got in the car. She worked in North Sydney so she would continue the trip past Chatswood to her destination after Bill and Andrew got to their workplace at Chatswood.

As they passed through Lindfield Sally talked about a story her dad told her from the old days when traffic was at a standstill most mornings in both directions. Sally said her dad reckoned that some mornings the congestion was so bad it took 20 minutes just to go a few kilometres. Bill chimed in and said he’d heard the stories of congestion too but wasn’t sure he believed them. Bill reckoned the stories got exaggerated over the years. Andrew just went back to the crossword and completed 6-down: C-O-N-G-E-S-T-I-O-N.

### COMMUNITY STRATEGIC PLAN OUTCOME

#### A CITY THAT IS GREEN

#### ITS STRATEGIC DIRECTION

Our transport system will be sustainable and promote greater levels of walking and cycling

#### FOCUS AREA

Sustainability  
Walking and cycling

#### EXAMPLES OF WAYS WE WILL MEASURE

Increase in km of footpaths, shared paths and cycling infrastructure  
Increase in number of electric vehicle charging points



## ITS STRATEGIC DIRECTION 1

aligns with Outcome 1 of Council's Community Strategic Plan ("A City that is green"). The Actions related to this Strategic Direction have been grouped under two broad Focus Areas – 'Sustainability' and 'Walking and cycling'.

### Sustainability

Our environment faces threats from climate change, a growing population and increased urbanisation. In the face of these ongoing challenges, we recognise that we have to balance the needs of people with those of the environment and its ecosystems.

Our community has expressed a strong desire to make our transport system more sustainable. Transport has a significant and direct impact on the environment, including on local air quality, noise levels, water quality, biodiversity and greenhouse gas emissions.

While greater adoption of zero-emission, electric vehicles may have benefits for air pollution and greenhouse gas emissions, a continued growth in vehicle traffic is still not sustainable due to limited road space and parking supply. As such, we need to continue to encourage greater levels of walking, cycling and public transport use.

As individuals, companies and governments increasingly adopt a net-zero emissions target, our transport system needs to play its part in achieving this goal. By encouraging greener transport options, not only can we become more sustainable, but we can maintain and enhance liveability as well.

- In 2016, compared to 2011:
- Less people travelled by car – as driver or passenger (39.2% in 2016 vs 43.7% in 2011)
- More people used public transport - train or bus (35.5% vs 30.7%)
- Less people cycled (0.9% vs 1.1%)
- More people walked (7.9% vs 7.4%)\*

Electric vehicles benefits over conventional petrol/diesel cars:

- cheaper to run and maintain
- better for the environment and air quality
- improved safety
- easy to power from local and renewable energy sources, reducing dependence on oil.

\* Source: Australian Bureau of Statistics, Census of Population and Housing 2011 and 2016.

### Current Council initiatives

- Partner with the state government on active transport projects
- Provide education and training events promoting active transport
- Implementing a fleet efficiency strategy, reducing greenhouse gas emissions from our fleet by 31% since 2008/09.
- Implement the goals of Our Green City Plan 2028, Council's Sustainability Action Plan with sustainable transport targets..

### Future Council initiatives

- Explore solar power generation for electric vehicle (EV) charging stations and install at least two EV charging stations per year in various locations across the LGA.
- Incorporate the idea of resilience into our transport system to ensure it can be agile enough to react to, and recover from, major disruptions such as natural disasters and pandemics.

Greenhouse gas emissions from our residents' car transport is estimated at 124,000 tonnes of CO<sup>2</sup> - 19% of our local area's emissions.





## Walking and cycling

Active transport is a form of transport of people (and sometimes goods) that only uses the physical activity of a human being for locomotion. It most commonly refers to walking and cycling.

Prioritising active transport increases levels of physical activity and community health and wellbeing. It also reduces negative environment impacts including greenhouse gas emissions.

Community feedback identified a strong desire to improve walking and cycling infrastructure across the LGA by providing high-quality, safe and accessible infrastructure and end-of-trip facilities. Safe footpaths and cycling infrastructure are particularly important to children, the disabled and older age groups. Improving options for the 'first and last mile' of journeys is important otherwise this can be a deterrent to using these transport modes.

Encouraging walking and cycling for short and medium-length trips also serves to reduce overall demand for car parking at key locations including our CBDs and local centres.

The continued growth in sales of e-bikes presents a great opportunity to further encourage cycling, especially in a hilly LGA like Willoughby. E-bikes particularly help older cyclists to continue cycling well into their senior years, providing valuable health benefits.

By working with Transport for NSW and neighbouring councils to complete missing links in the 'green web' of safe walking and cycling network, we can continue to further encourage walking and cycling across our LGA and broader region.

The second highest travel mode is 'walk only' (27% of all trips), highlighting the use, proximity and accessibility of local centres and connections as a positive within the local area. See Figure 11 for walkability scores across the local government area.





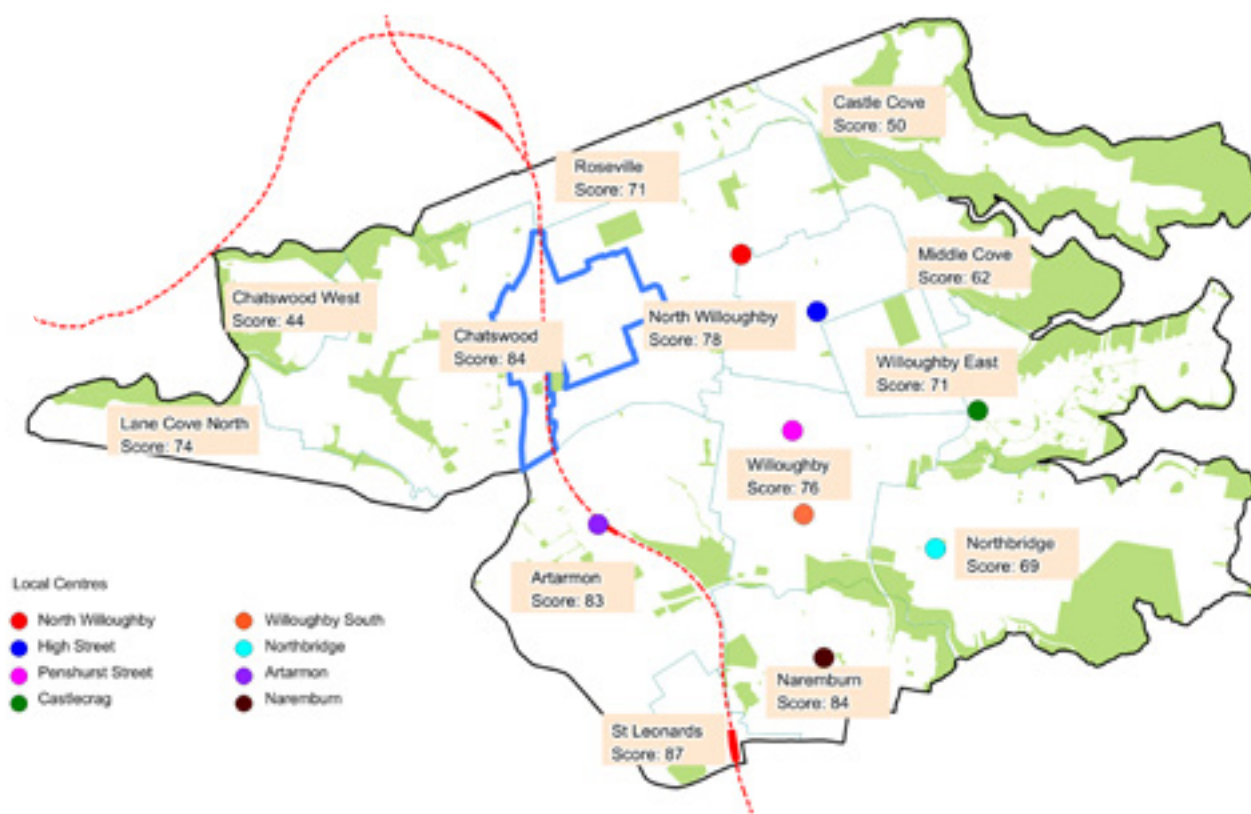
### Current Council initiatives

- Increase the coverage and quality of our footpaths and shared paths through our ongoing footpath capital works program.
- Revise planning controls to encourage use and connections with active transport around new developments and reduce reliance on private vehicles. install bike racks at key sites
- Continuing to progress the planning, development and construction of the various routes identified in *Willoughby Bike Plan 2017*.
- Identify 13.1km of additional safe bike paths to be constructed over time.
- Install bike racks at key destinations.

### Future Council initiatives

- Continue building a 'green web' of safe walking and cycling links that integrate with those of neighbouring councils.
- Work with Sydney Trains to install more bicycle parking and end-of-trip facilities at train stations.
- Install drink stations, rest stop areas and lighting on key walking and cycling routes.
- Enhance the safe pedestrian network through improved lighting, linkages, pedestrian crossings and pedestrian activity mobility plans (PAMPs).
- Partner with NSW Education to implement a program to encourage more walking and cycling to school.

Figure 11 - Walkability Score Map



Source: Walk Score



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Our transport system  
will provide excellent local  
and regional connectivity  
and be accessible to all

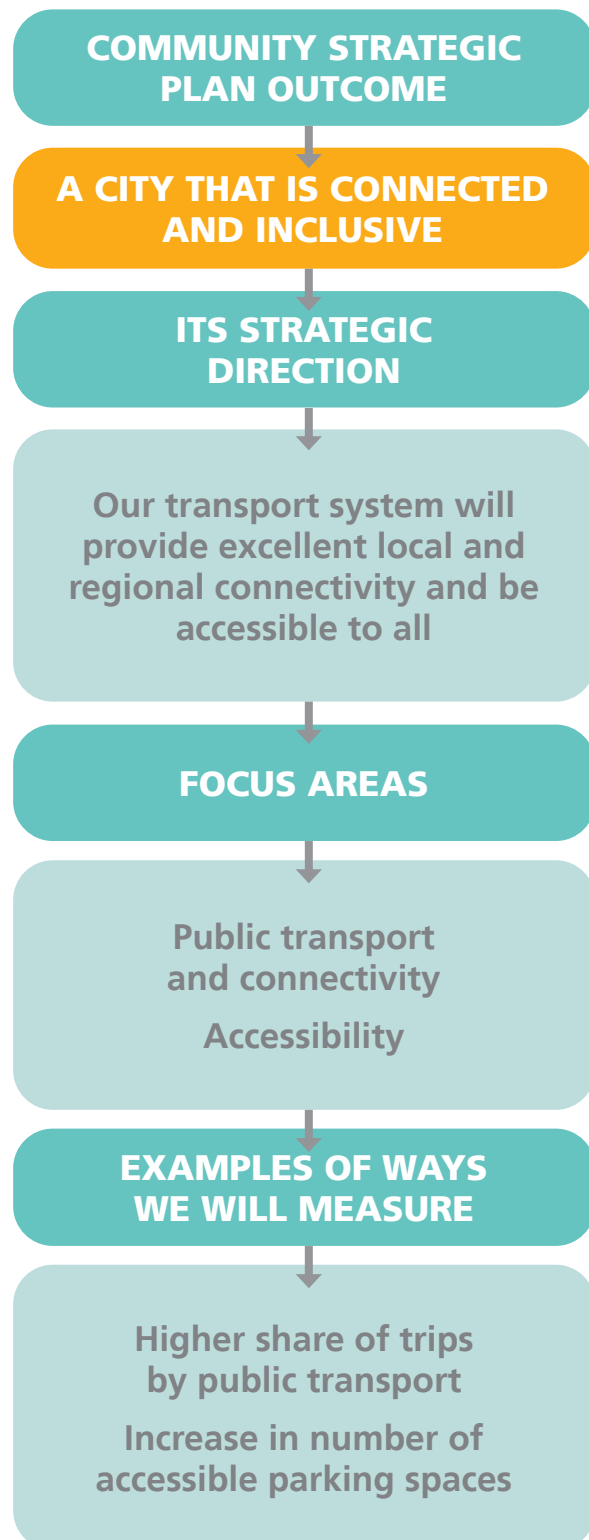
## ITS STRATEGIC DIRECTION 2

Sarah stepped out the front door for her normal journey to work. She loved living so close to the CBD and the advantages that came with that. She loved the nightlife and the weekend excitement in the mall. She loved the variety of food offerings and entertainment options in the CBD and how convenient it was to get to the city to meet her friends on Friday night.

Normally she enjoyed the short stroll to the station with the sun drenched avenues and mall, but this morning was wet so she'd have to zig zag through the shops and plazas that linked the streets to stay dry. This wasn't a bad thing. All the new developments in the CBD had public access through their forecourts so this was a great excuse to have another look at the watch she had her eye on in a shop in the alleyway near the station.

The shop was closed but the watch she liked was still in the front window. Her train was due in 2 minutes but there was no rush. Trains came every 5 minutes. She could afford a few minutes and now was the time to purchase. Two swipes later on her phone and the transaction was done without ever entering the shop and the watch would be delivered to her home ready for tomorrow night's outing. Easy.

Sarah's trip on the train to Barangaroo was less than 10 minutes but she still got a few emails done before arriving. She even booked the on-demand bus for tonight so she could go straight from the station after work to her mum and dad's house at Castle Cove for dinner. She knew her Dad would be happy to pick her up but it was raining and it was so much easier for her to jump on and off the bus than him coming out on a cold wet night to get her. She felt good knowing he wouldn't be driving in these conditions.





## ITS STRATEGIC DIRECTION 2

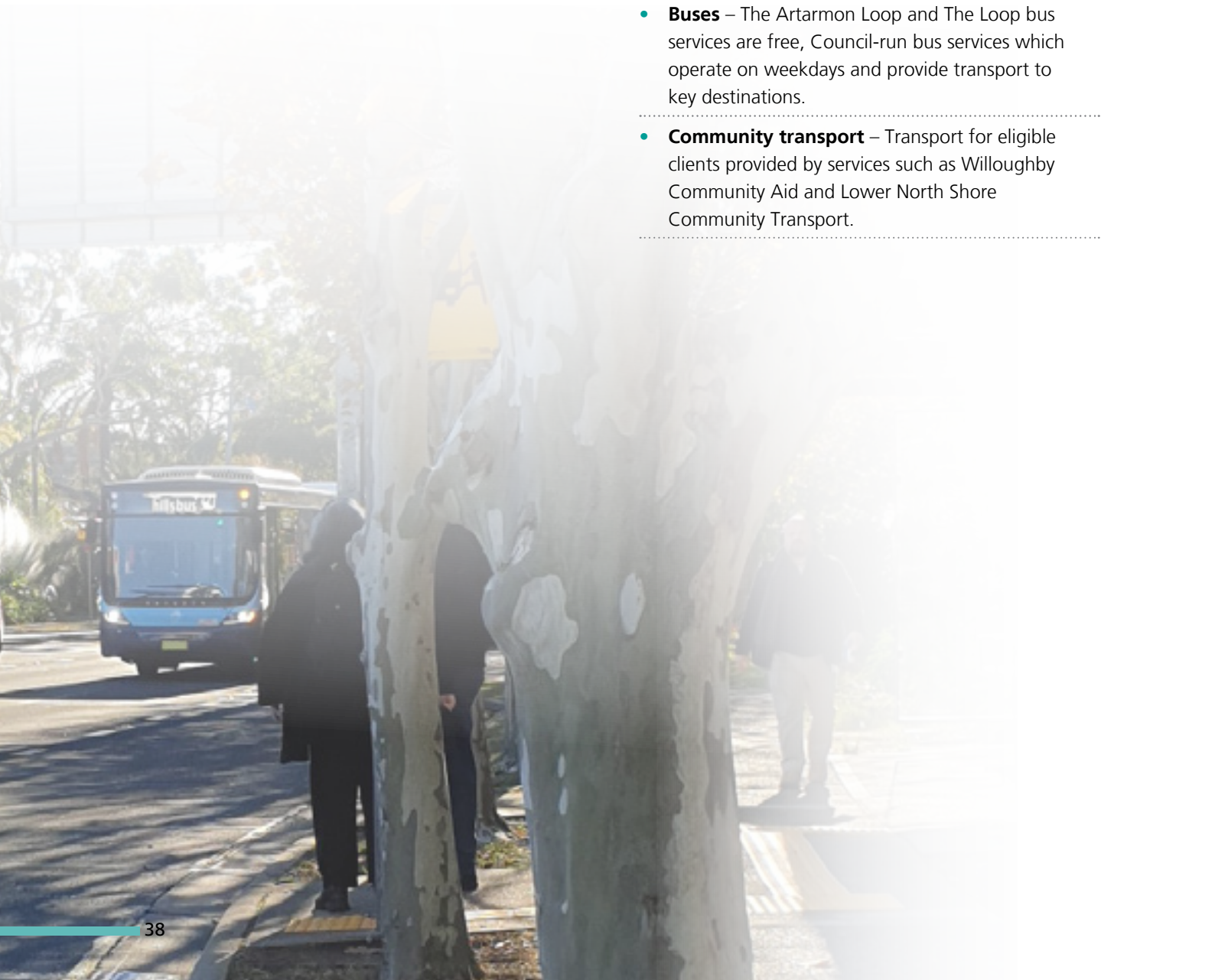
aligns with Outcome 2 of Council's Community Strategic Plan ("A City that is connected and inclusive"). The Actions related to this Strategic Direction have been grouped under two broad Focus Areas – 'Public transport and connectivity' and 'Accessibility'.

### Public transport and connectivity

Public transport is the movement of passengers by group travel systems, typically managed on a schedule, operated on established routes, and that usually charges a fare for each trip.

Public transport can include public buses, trams/light rail, commuter trains, rapid transit (metro) and ferries. The Willoughby LGA has a variety of public transport options:

- **Train** – The T1 North Shore Line of the Sydney Trains network, with three stations in the LGA (Chatswood, Artarmon and St Leonards). During weekday peak hours, the area is also served by several Central Coast & Newcastle Line intercity train services.
- **Metro** – The Sydney Metro Northwest line, with current terminus at Chatswood. This line will continue to the Sydney CBD and beyond as part of the future Sydney Metro City & Southwest line (scheduled for completion in 2024).
- **Buses** – A variety of bus routes are operated by Sydney Buses and Forest Coach Lines. These routes provide connectivity across the LGA and to other parts of Sydney, with the Chatswood bus interchange being the hub of the network within the Willoughby LGA.
- **Buses** – The Artarmon Loop and The Loop bus services are free, Council-run bus services which operate on weekdays and provide transport to key destinations.
- **Community transport** – Transport for eligible clients provided by services such as Willoughby Community Aid and Lower North Shore Community Transport.



Given these services (except for The Loop bus services) are all operated by agencies or companies other than Council, this highlights the need for Council to work with these providers to continue to provide a quality service that meets and responds to the changing needs of Willoughby residents, workers and visitors alike.

Community feedback raised a variety of issues relating to the public transport network across the Willoughby LGA. This included a desire to improve the coverage, frequency, reliability and speed of bus services and the quality of related infrastructure such as bus shelters. Addressing these issues will help to further encourage public transport use and increase their modal share. In doing this, we can create a transport network that provides excellent connectivity to key destinations.

#### **Current Council initiatives**

- Work with Transport for NSW to implement a trial on the use of electric autonomous buses to/from the Chatswood CBD.
- Work with Transport for NSW and Northern Beaches Council to deliver the 'B-Line' bus rapid transit link between Chatswood and Dee Why via Frenchs Forest.
- Advocate to Transport for NSW for a trial the implementation of bike loading racks on buses.
- Investigate the extension of The Loop bus services through possible new routes and extended hours of operation

#### **Future Council initiatives**

- Install new bus shelters on high priority local routes as part of Council's annual capital works programs over the next five years
- Work with Transport for NSW to create more indented bus layby areas to minimise disruption to traffic flow on key routes such as the Pacific Hwy.
- Work with Transport for NSW on improvements to the overall public transport network including the establishment of a working group to investigate options for improving the operation and efficiency of the Chatswood bus interchange.

## Accessibility

Community feedback identified a strong desire for greater accessibility, particularly for disabled and less mobile residents. Accessibility means different things to different people. It can include:

- Mobility - ease of physical movement and quality (availability, speed, frequency, comfort) and universal accessibility of travel modes
- Proximity - distance between destinations
- Connectivity - between modes
- Affordability - cost of travel relative to income
- Convenience - ease of obtaining travel information, paying fares, carrying luggage
- Social acceptability - social status of modes.

A transport system is more successful when there is access to and between different modes of transport. Having greater choice, and choices that are convenient, will encourage less use of private vehicles and greater use of active and public transport modes. The 'first and last mile' is often a key challenge for accessing active and public modes of transport.

82% of our roads have a footpath (on one or both sides).

Multi-modal use improves options for the customer, particularly those who have limited access to private vehicles. It also disperses the congestion on any one mode, provides choice of modes during times of disruption or emergency and increases the use of more sustainable options.

Creating connections and missing links within the transport network between places and between modes of transport is important, particularly for customers in more isolated areas. In the Willoughby LGA, many of the peninsular suburbs on Middle Harbour do not have easy and frequent access to transport choices other than driving. Increasing accessibility via modes other than the car is therefore an important priority for these areas.

A key component of accessibility of a transport system is for the disabled and less mobile. Approximately 18% of Australians have a disability and the prevalence of disability increases with age. Around 1 in 8 (13%) people aged under 65 have some level of disability, rising to 1 in 2 (51%) for those aged 65 and over (AIHW 2019, p. 2). As such, we need to cater for this large segment of society, particularly against the backdrop of our ageing population. Community feedback identified a need to better cater to these groups. This can be done for example by providing more accessible parking spaces in key locations and by increasing easy access at train stations and bus stops.

While much can be done by Council to address these issues, we need to continue to work with public and private transport providers to increase access to services across the LGA.

- End-of-trip facilities (bike parking, lockers, change rooms and showers) are designated places that support cyclists, joggers and walkers in using alternative ways to travel rather than driving or using public transport.



### Current Council initiatives

- Develop and implement Accessible Parking Space Policy and Guidelines.
- Improve universal access to public infrastructure and service facilities
- Work with Transport for NSW to bring mobility/disabled parking and motorcycle parking on footpath restrictions in line with other states.

### Future Council initiatives

- Develop a program of infrastructure, incorporating drink stations, toilets, rest stop areas and lighting for all footpath capital work projects on key routes listed in Council's four-year capital works program.
- Determine the provision of, and undertake an assessment on, the feasibility and safety of existing and proposed designated accessibility parking spaces in residential areas and activity centres of the Willoughby LGA.







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Our transport system  
will contribute to the  
development of vibrant,  
liveable and safe places

## ITS STRATEGIC DIRECTION 3

Jack liked to work from home in the mornings. He could do most things from home now anyway so the need to travel had been reduced. It also gave him a chance to have breakfast with the kids and sometimes he travelled with them on the automated bus from his home in Northbridge to Chatswood where he then jumped on the metro to Macquarie Park.

His eldest daughter Maddy had just turned 10 and wanted her independence. "I think I'll stay at school a bit longer this afternoon Dad," she said. "No need to meet me at the gate this afternoon. I'll find my own way home today. I might even go to the movies with Jenny."

Jack knew he had to give Maddy some responsibility and thought through the options. "Do Jenny's mum and dad know about this? If I agree to this, you'll need to stay in the safe zone until mum or I can pick you up."

"Of course, dad. I love you dad. You're the best dad in the world." Jack smiled and knew when he was being buttered up but he knew the safe zone was well lit and had full CCTV coverage. He'd linked Maddy's phone to the safe zone app so he knew where she was at all times in the zone and could even be notified if she left the zone. "Ok," he said without lifting his eyes from his iPad. He spent the next minute on his iPad then turned back to Maddy. "I've booked an automated vehicle to pick me up at 6. I'll come in and pick you up in the kiss and ride at the edge of the safe zone on Albert Avenue at 6.15. I'll send you the details of the vehicle tracking code so you know when I'm getting close. I've already booked it to swing past Jenny's house on the way home so make sure the two of you are ready and waiting."

"Great," replied Maddy. "I've already emailed Jenny and she's looking forward to it. Jenny's mum wants to know if I can stay at her house tonight instead and I'll ride home along the new cycle path tomorrow. It's only a few kilometres and it's all off the road."

"Sounds like a great idea," replied Jack. "I might dust my bike off and we'll all go for a ride together in the morning."





## ITS STRATEGIC DIRECTION 3

aligns with Outcome 3 of Council's Community Strategic Plan ("A City that is liveable"). The Actions related to this Strategic Direction have been grouped under two broad Focus Areas – 'Vibrant and liveable places' and 'Safe places'.

### Vibrant and liveable places

Through other Council strategic documents (e.g. *Willoughby Local Strategic Planning Statement and Willoughby Local Centres Strategy to 2036*), Council has already recognised the importance of creating vibrant and liveable places. The transport system has a vital role to play in enabling and supporting the development of such places. In doing this, this ultimately helps promote community health and wellbeing.

Using the Movement and Place Framework helps us to identify the areas that are primarily for 'movement' (of people and goods), and those that are more 'places', where people are the most important element. Identifying the areas that need to have a 'movement' focus and those that need a more 'place-based' approach is crucial. Creating more 'complete streets', especially in our local centres, would help to further enhance the 'place' character of these areas and improve liveability.

Community feedback highlighted the desire to protect, maintain and enhance the liveability of our local centres in particular. However given many are located on highly-trafficked roads, we will need to continue to work with both the local community and other stakeholders such as Transport for NSW to find solutions that strike a balance between these two competing roles.

#### Current council initiatives

- Develop Movement and Place Local Area Plans for the Chatswood and St Leonards CBDs and all local centres.
- Develop Vibrant Street Corridor Plans for Willoughby Rd, Penshurst St and Sailors Bay Rd, incorporating the 'Movement and Place' framework

#### Future council initiatives

- Deliver multi-modal transport plans for recreational venues including Willoughby Park, Bicentennial Reserve Oval, and the provision of shuttle buses for workers between the Chatswood CBD and Artarmon industrial area.
- Incorporate the principles of the Government Architect NSW and Transport for NSW's Movement and Place Framework into future Council capital works roads programs.

## Safe places

Efficiently managing traffic and the transport network is a key component of creating safe places. Safety focuses not only on safety when using roads, but also on safety when using transport services such as trains and buses. Creating safer roads - especially in areas with large numbers of pedestrians and cyclists - is a key element to increase liveability.

Autonomous vehicles (AVs) have been touted as a revolution in mobility and as a means to reduce death and injuries resulting from factors such as driver fatigue, driver distraction, speed and inexperience. Trials are underway across Australia and around the world. However Council needs to continue to address more short-term and medium-term priorities relating to road safety, including creating Local Road Safety Action Plans and delivering road safety education programs.

Council can also help allay safety concerns around walking, cycling and public transport use by applying crime prevention through environmental design (CPTED) principles to both new developments, as well as the redevelopment of existing areas. This will help to further encourage the use of these transport modes and contribute to liveability.

## Current Council initiatives

- Complete study and develop priority actions that create 40km/h high pedestrian activity areas (HPAAs) within the Chatswood and St Leonards CBDs, and the Artarmon, Northbridge and High Street (North Willoughby) local centres.
- Prepare a report on the feasibility of having CCTV cameras installed within the road reserve on designated streets within the Chatswood CBD.

## Future Council initiatives

- Develop and deliver priority Local Road Safety Action Plans.
- Continue the development and implementation of annual road safety education programs across the LGA.





Our transport system  
will support our local  
economy by efficiently  
managing congestion  
and parking demand



## ITS STRATEGIC DIRECTION 4

Thelma looked out the window of her unit in west Chatswood across the bushland down to the Lane Cove River below. She'd lived in the area all her life and even went to school just around the corner. She remembered the days when you had to plan shopping trips to Chatswood in advance because getting across the Pacific Highway in the old days was almost impossible. Today would be so much different.

Rodger from unit 22 next door still had his licence but didn't own his car anymore. He knew he could use the bus and the automated vehicles but having the independence of the share car made him feel more in control. Plus he liked the excuse to offer Thelma a lift and she liked that too. Today Rodger was going to visit his daughter so he could drop Thelma at the shops if she wanted. Thelma liked Rodger's company so she accepted the offer.

Thelma had a doctor's appointment so Rodger used the drop-off zone in front of the medical centre. It was easy now that parking in the CBD had been removed - it allowed you to be dropped and picked up at any location you wanted. The doctor provided Thelma a prescription but Thelma chose the home drop-off service. It would be there before she got home and save her a trip to the chemist.

There was a great cafe just up the road from the medical centre and the new pedestrian mall that extended along most of the CBD was easy to walk through. Thelma's favourite cafe was the one in Anderson Street looking towards where the old Albert Avenue carpark used to be. With less car parking needed in the CBD, the carpark had been redeveloped into new shops and community hubs.

Drinking her hot chocolate, she thought through the rest of her day. She had some groceries to buy and a few gifts for friends and family. She'd be able to carry the small gifts on the bus on the way home but would arrange for an automated vehicle delivery of the groceries. She could go home in the automated vehicle but she'd need to carry them in. Better to wait and time it for when Rodger got back from his daughter's place so she had an excuse to call him. He could carry them in for her.



## ITS STRATEGIC DIRECTION 4

aligns with Outcome 4 of Council's Community Strategic Plan ("A City that is prosperous and vibrant"). The Actions related to this Strategic Direction have been grouped under two broad Focus Areas - 'An efficient road network' and 'An efficient parking network'.

### An efficient road network

An efficient road network is vital to support our local economy. However congestion impacts many roads and is a key frustration for residents, businesses and visitors alike. Community feedback identified congestion as one of the key transport issues facing our LGA.

A particular challenge is the amount of through-traffic, which is traffic that neither originates nor finishes in the LGA, but simply passes through. This has effects on major corridors such as the Pacific Highway but also affects secondary, more local roads as well.

Chatswood CBD is an important place for transport, work, shopping and entertainment. However this combination of uses contributes to significant congestion, especially during weekday peak hours and on weekends.

Managing congestion (see Figure 12) relies on:

- Integrated transport and land use planning
- Increased use of active and public transport
- An improved road network
- Management of user behaviours

While targeted upgrades to key 'pinch points' or intersections can provide some relief, constantly increasing road space to decrease congestion is not realistic or feasible. This is due to levels of urbanisation, cost, time, environmental and community impacts, as well as the idea of 'induced demand' – creating more road space just creates more traffic.

Instead, reducing the overall demand for travel, managing the road network better, supporting behavioural change and encouraging the use of active and public transport are better solutions.

This is known as travel demand management (TDM) and is recognised as a more efficient and cost-effective approach to managing congestion.

There is no singular measure of congestion. It can be based on facts and figures, but this requires data that may not be available to everyone. Open data is an evolving concept that will assist in understanding and creating solutions for congestion.

Measuring congestion may also be based on perception. In most urban areas, congestion is a given. The reliability of journey time is often more important as individuals can factor this into their journey.

Transport infrastructure and services need to link to other local government areas and are often reliant on state government funding or service provision. What happens outside of the Willoughby LGA has flow-on effects for our transport system.

We support the approach to managing congestion as outlined in Figure 12. However, we are reliant on integration with the NSW Government and other councils to address the problem collectively.

### Current Council initiatives

- Complete all actions associated with dedication of road widening at the Sydney Metro City & Southwest 'dive site' at the intersection of the Pacific Hwy and Mowbray Rd.
- Continue to develop and complete priority actions to improve traffic flow in and around the Chatswood CBD.

### Future Council initiatives

- Investigate and prepare a report on the benefits of car sharing and carpooling including setting targets for these transport modes.
- Work with Transport for NSW to continue identifying potential 'pinch point' road network improvements and other measures including the possibility for peak hour tidal flows on the Pacific Hwy.

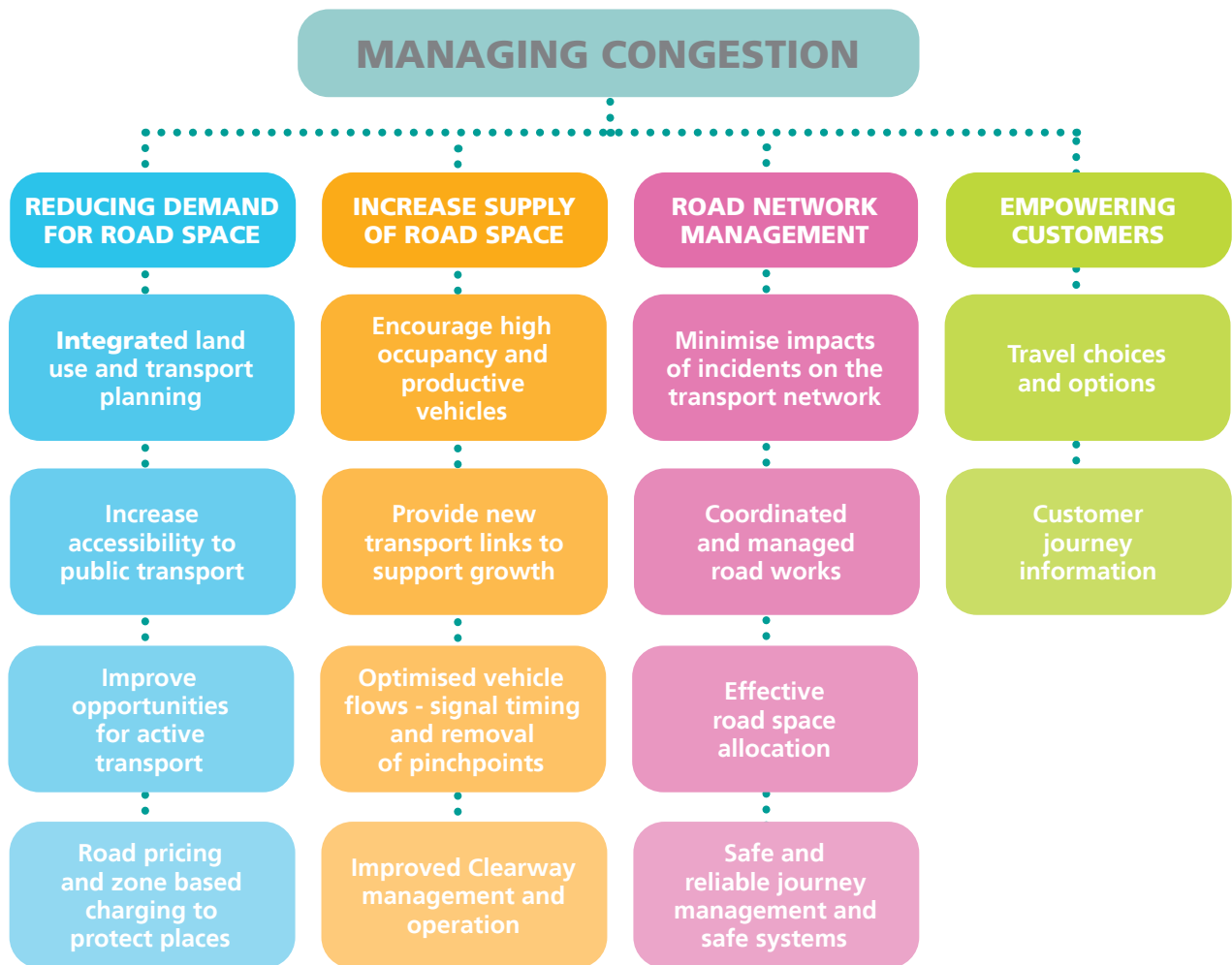


Figure12: Managing Congestion

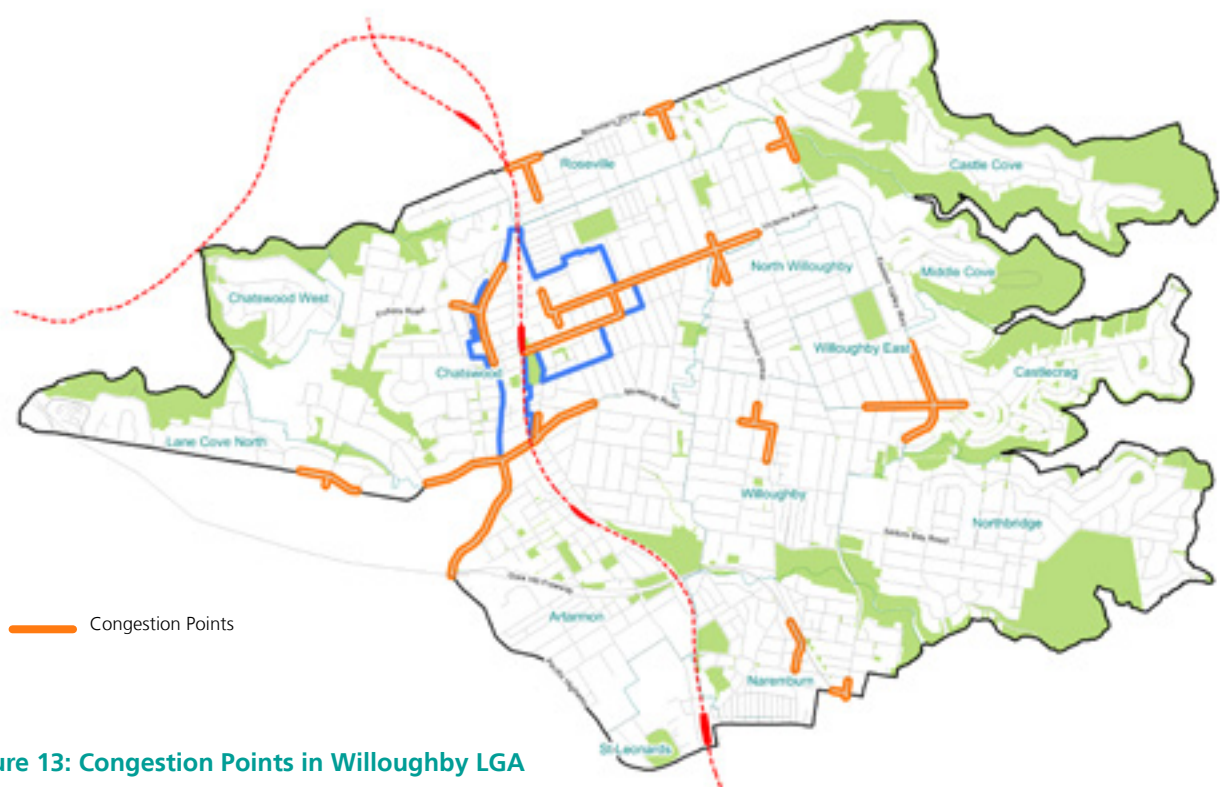


Figure 13: Congestion Points in Willoughby LGA



## An efficient parking network

As in most urban environments, the competition for parking (both on-street and in off-street public car parks) across much of the Willoughby LGA is intense. This is particularly the case within and around the fringes of the CBDs, local centres and transport hubs and other focal points such as sports facilities, cultural and religious centres.

Public parking is vitally important to the economic and social wellbeing of the city. In commercial areas, it is closely linked to business (especially retail) prosperity and in residential areas, street parking supports daily life. Council has an important responsibility to balance the allocation of parking to meet the needs of residents, local workers, business, visitors and commuters.

Parking congestion, particularly in and around the Chatswood and St Leonards CBDs and local centres has been raised in community feedback. The concerns include: 'there isn't enough', 'it's too expensive' or 'it's too hard to find'.

In urban areas, the growth in vehicle ownership creates high demand for public car parking, where often there is limited availability. To reduce demand, avoid scarcity and avoid surplus there are two broad options:

- Increase the parking supply
- Manage the current parking more efficiently

Providing more car park infrastructure is not a feasible or a realistic response due to cost, space and the longer term perpetuation of car dependency, which leads to more congestion.

Tools we can use include: limiting parking, road space allocation, road user priority, technology and pricing. Improved communication, information and wayfinding on parking options with real-time data will also assist in providing quicker access to parking.

Parking data is limited. It would benefit us to understand our community's concerns in detail and where and when the issues are.

For on- and off-street car parking spaces, it would be useful to know:

- The total number of spaces, both on- and off-street
- Rates of use
- The number and location of restricted spaces and metered spaces
- The specific purpose for the parking

The management of parking needs to complement strategies to increase public transport and active travel trips and discourage car trips. Parking at town and village centres, as well as high visitation areas such as parks, beaches and recreational areas, need to be managed smarter.

The Chatswood CBD Traffic Study (2012) identified options for improving operations of the movement/parking systems in the Chatswood CBD, with specific emphasis on removing on-street parking in places and implementing a parking guidance system to guide users to off-street car parking locations.

Council has around 2600 dedicated off-street carparks and (metered) on-street spaces. Use of these spaces from 6am to 7pm averages 90% on weekdays and 80% on weekends.

2016/17 data highlights that of Willoughby residents 'vehicle driver' (43% of all trips) is the most used travel mode in the local area.'

### Current Council initiatives

- Operate a number of car parking stations, manage on-street parking and use resident parking schemes and parking permits to proactively manage parking.
- Operate a SPOT parking website that identifies the availability and cost of on- and off-street council parking.
- Work with private providers to explore wayfinding signs to parking in Chatswood CBD to reduce the amount of traffic circling for spaces.

### Future Council initiatives

- Provide driver awareness/education programs that encourage drivers within the Chatswood CBD to use parking guidance technology.
- Implement Council's Street Parking Strategy to optimise street parking, with time and pricing restrictions, parking controls, car sharing opportunities and alternative transport choices for non-essential car journeys

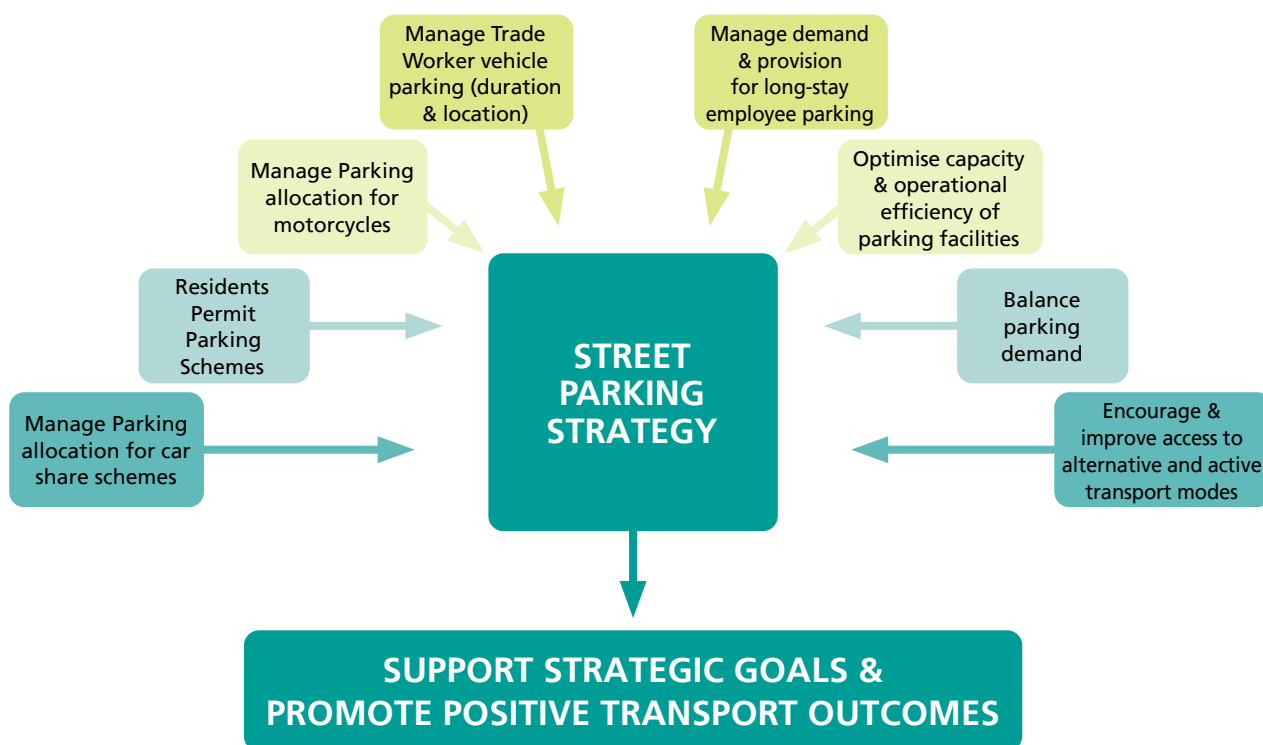


Figure 14 - Street Parking Strategy Drivers and Objectives



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Our transport system  
will embrace smart  
technology and respond  
to community needs



## ITS STRATEGIC DIRECTION 5

The sun still hadn't risen when Phil left home for the office. There was a faint glow from the solar powered street lights at the corner of his street and they provided enough light to see without being intrusive. He walked the 50 metres to the corner and checked his phone for the loop bus location. He'd checked his phone before leaving the house so there was really no surprise it was almost here. Some mornings if he was feeling energetic he'd walk the two kilometres to the main bus stop but today he'd jump on the shuttle as it did its loops through the suburbs linking back to the main bus route. Maybe he'd walk home he told himself, putting the little bit of guilt at not exercising at bay for a few hours at least.

It only took a few minutes to the Eastern Valley Way bus stop where Phil would pick up the bus to the city. But even in those few minutes it was a chance to say hi to the regulars and catch up on a little community gossip. Harry from number 9 was always full of info and the loop bus was sometimes a better source of community info than the local newsletter. The council had started electronic display information on the bus shelters and in the loop bus so there was plenty of opportunity to access information.

Phil enjoyed the bus trip to the city. It was a relatively easy and fast run. Bus services were regular, and not crowded anymore. With the data available to the bus company of live traffic flows there was rarely a time when the bus wasn't running to the scheduled timetable.

### COMMUNITY STRATEGIC PLAN OUTCOME

### A CITY THAT IS EFFECTIVE AND ACCOUNTABLE

### ITS STRATEGIC DIRECTION

Our transport system will embrace smart technology and respond to community needs

### FOCUS AREAS

Smart technology  
Effective policymaking and regulation

### EXAMPLES OF WAYS WE WILL MEASURE

Increase in number of parking spaces utilising smart parking guidance systems

Increase in positive community perception of transport issues

## ITS STRATEGIC DIRECTION 5

aligns with Outcome 5 of Council's Community Strategic Plan ("A City that is effective and accountable"). The Actions related to this Strategic Direction have been grouped under two broad Focus Areas - 'Smart technology' and 'Effective policymaking and regulation'.

### Smart technology

Technology will continue to revolutionise transport by further personalising transport services and maximising the efficiency of our road and parking networks.

Customer interface, data and insight, infrastructure and vehicle technologies are constantly evolving. Understanding current and emerging technology trends will be important when planning and delivering available transport options.

The concept of Mobility as a Service (MaaS) provides a one-stop shop for timetabling, connections, modes and payment. It allows users to personalise routes that best suit their needs, allowing them to pick and choose whatever transport mode they desire for their particular trip. This not only includes 'traditional' public transport like buses and trains, but also can include more recent innovations in mobility such as car sharing, bicycle-sharing systems and ridesharing services.

MaaS has the potential to significantly increase the use of alternative transport and lessen the dependency on cars. The NSW Government is currently undertaking its own MaaS trial.

Technology can be particularly useful in maximising the efficiency of parking supply – using parking guidance systems and supporting infrastructure (for both on- and off-street parking) – as well as optimising traffic flow through intelligent transport systems.

### Current Council initiatives

- Implement MaaS trial in the Chatswood CBD.
- Develop plans for a parking guidance system in the Chatswood CBD.
- Investigate improvements to traffic flow by way of traffic light phasing and other changes for key routes in conjunction with Transport for NSW.

### Future Council initiatives

- Develop and implement a GIS (geographic information system) land use plan and development application monitoring and reporting system to track the locations and size of transport changes impacting on land use in the LGA.
- In conjunction with Transport for NSW, undertake a study that highlights the cost and benefits of implementing Wi-Fi roll out at technology kiosks and at key transport nodes.

## Effective policymaking and regulation

To respond to the needs of our community requires effective policymaking and regulation. Policymaking and regulation related to transport planning is constantly evolving as we increasingly recognise the need to reduce car dependency and create a more efficient and sustainable transport system. To this end, this strategy aims to articulate Council's vision and objectives relating to transport in one document.

These goals align with other Council strategic planning documents, including the Community Strategic Plan (CSP) Our Future Willoughby 2028, Willoughby Local Strategic Planning Statement (LSPS), Willoughby Local Environmental Plan (LEP) 2012 and Willoughby Development Control Plan (DCP).

One of the main Council policymaking changes that will result from this process is to revise the car parking, bicycle parking and end-of-trip facilities rates as currently contained within Chapter C4 ('Transport Requirements for Developments') of the DCP. The ultimate aim will be to have car and bicycle parking provision in new developments better reflect evolving attitudes and trends around car ownership and car use, and to further encourage sustainable mobility patterns.

Transportation regulation is administered by all levels of government and covers:

- Fees and charges
- Conditions
- Levels of service
- Operating authority of public transport modes such as rail, light rail, ferries and buses

These regulations ensure transportation services are adequate and that users are protected from excessive prices or unfair practices.

As new business models and services like ridesharing emerge, governments are challenged with creating or modifying regulations, enforcing them, and communicating them to the public. And they must do this while working within legacy frameworks and attempting to foster innovation.

Often technology and the systems are available but the customer sentiment and the regulatory framework to support the innovation is not. This is a challenge for all governments and operators.

Forecasting for user take-up - both in interest and time - on changing technology and transport modes, will need to be closely monitored and assessed.

We need to stay aware of transport innovation so we do not inadvertently prevent or limit an opportunity due to legislation or policy.

### Current Council initiatives

- Undertake a review of both on and off-street parking rates within the Chatswood CBD, as part of fees and charges schedule, to incentivise electric vehicles (EVs), off-peak utilisation and car sharing.
- Review car parking, bicycle parking and end-of-trip facility rates of Chapter C4 ('Transport Requirements for Developments') of Willoughby DCP to encourage more sustainable mobility patterns.
- Work with the NSW and federal governments to create a working group of Greater Sydney councils to review changes to transport and traffic legislation.

### Future Council initiatives

- Revise the schedule of works program relating to Voluntary Planning Agreements (VPAs) to incorporate active and public transport projects.





## References

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- ii Willoughby City Council, Community Strategic Plan: *Our Future Willoughby 2028*
- iii The Concourse Research, *Clarity Strategic Research, October 2018*
- iv *Local Centres Strategy Engagement Report* through local centres exhibition
- v Willoughby City Council, *Community Wellbeing Survey 2019*
- vi Colliers International 2017, *NSW Office Market Research Report 2017* (unpublished)  
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- ix Transport for NSW, *Future Transport 2056*
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# APPENDIX TABLE OF ACTIONS

WILLOUGHBY INTEGRATED TRANSPORT STRATEGY 2036

AUGUST 2020

## CSP OUTCOME – A CITY THAT IS GREEN

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
1	Sustainability	Prepare report on feasibility of all Council vehicle fleet to become electric vehicles (EVs), this could include a mix of fully electric vehicles and hybrid heavy fleet, plant and equipment.	Short	Further funding required
2	Sustainability	Ensure green power offsets are purchased for electric vehicle charging as well as completing investigations into solar power generation for electric vehicle charging stations (including for e-bikes).	Short	Further funding required
3	Sustainability	Install two electric vehicle charging stations both on-street and in public car parks per year, and investigate the possibility of also providing e-bike charging utilising the same infrastructure.	Short	Further funding required
4	Sustainability	Develop and implement priority Active Transport Plans and actions which include: <ul style="list-style-type: none"> <li>• Creation of a mobile app highlighting locations, modes and connections for all active transport modes in Willoughby LGA</li> <li>• Deliver annual marketing and education campaign on active and public transport options</li> <li>• Installation of signage across the city to encourage active transport routes throughout the LGA</li> </ul>	Long	Further funding required
5	Walking and cycling	Further develop 'green-web' plans for walking and cycling (in conjunction with neighbouring councils where applicable), linking all open space assets. The actions of the plan are to include identification of all land acquisition, program development, construction costs, time frames and GIS mapping details.	Medium	Further funding required
6	Walking and cycling	Work with TfNSW to address barriers to walking and cycling caused by major transport corridors such as the Pacific Highway, Gore Hill Freeway and North Shore railway line, with request to provide specific details on what locations, actions proposed, likely cost and estimated timeframe.	Short	Funded

## CSP OUTCOME – A CITY THAT IS GREEN

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
7	<b>Walking and cycling</b>	<p>Develop and Implement enhanced safe pedestrian network plan that encourages district / regional walking trips through the provision of:</p> <ul style="list-style-type: none"> <li>• Pedestrian weather shelters on key high pedestrian activity streets in CBD and Local centres</li> <li>• Increased footpath linkages and lighting (Zone 1)</li> <li>• Development of pedestrian overhead bridge plans for key priority routes</li> <li>• Implementation of actions as outlined in Chatswood CBD PAMP</li> <li>• A new pedestrian link between Chatswood interchange and new plaza on Help St - aligning crossings and removing obstacles to connectivity</li> <li>• Pedestrian crossing improvements at Albert Avenue / Thomas Lane, Chatswood</li> <li>• Footpath infrastructure improvements along Pacific Highway through St Leonards and Chatswood</li> <li>• PAMP for Sailors Bay Road and Willoughby Road</li> </ul>	Long	Further funding required
8	<b>Walking and cycling</b>	<p>Complete a study and develop priority actions that highlight the feasibility of widening all footpaths listed in Council's Annual Footpath Plan priority list to 1.8m to better cater for mobility scooter and disabled users. Further projects may flow from this action.</p>	Long	Further funding required
9	<b>Walking and cycling</b>	<p>Work with TfNSW to incorporate upgraded traffic control sensor systems and pedestrian countdown timers on all traffic signals installed within Willoughby LGA. Further projects may flow from this action.</p>	Short	Funded
10	<b>Walking and cycling</b>	<p>Encourage district / regional cycling trips through the implementation of priority actions for enhanced safe bike network and facilities as outlined in Council's Bike Plan including:</p> <ul style="list-style-type: none"> <li>• Increase km of bike paths and lanes through the implementation of various secondary bicycle infrastructure projects</li> <li>• Increase footpaths, bike racks and drink stations within the CBD and local centres</li> <li>• Explore foldaway bikes / scooters scheme</li> </ul>	Long	Further funding required
11	<b>Walking and cycling</b>	<p>Encourage district / regional cycling trips through the implementation of priority actions for enhanced safe bike network and facilities as outlined in Council's Bike Plan including: Design and implementation of the Chatswood to St Leonards shared path along the Pacific Highway</p>	Medium	Further funding required



## CSP OUTCOME – A CITY THAT IS GREEN

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
12	Walking and cycling	Encourage district / regional cycling trips through the implementation of priority actions for enhanced safe bike network and facilities as outlined in Council's Bike Plan including: Design and implementation of the Castle Cove to High Street shared paths and bike paths.	Short	Funded
13	Walking and cycling	Encourage district / regional cycling trips through the implementation of priority actions for enhanced safe bike network and facilities as outlined in Council's Bike Plan including: Design and planning of the Chatswood to St Leonards bike path via Artarmon. Construction funding of \$6.0M potentially 100% funded by TfNSW.	Short	Funded
14	Walking and cycling	Encourage district / regional cycling trips through the implementation of priority actions for enhanced safe bike network and facilities as outlined in Council's Bike Plan including: Plan and investigate for the development of a shared path from Chatswood to St Leonards within the rail corridor.	Medium	Further funding required
15	Walking and cycling	Investigate opportunities and locations to provide additional bicycle parking and end-of-trip facilities, including working with Sydney Trains to investigate additional end-of-trip facilities and secure bicycle parking at Chatswood, Artarmon and St Leonards stations.	Long	Further funding required
16	Walking and cycling	Advocate to TfNSW for the implementation of bike loading racks on buses.	Short	Funded

## CSP OUTCOME – A CITY THAT IS CONNECTED AND INCLUSIVE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
17	Public transport and connectivity	Work with TfNSW on the development and implementation of a trial on the use of electric autonomous buses to/from the Chatswood CBD. Further projects may flow from this action.	Medium	Further funding required
18	Public transport and connectivity	Install new bus shelters on high priority local road routes linking Chatswood, Artarmon, St Leonards and Northbridge in Council's Annual Capital Works program over the next five years.	Long	Further funding required
19	Public transport and connectivity	<p>Work with TfNSW for improved public transport infrastructure including:</p> <ul style="list-style-type: none"> <li>• The B-Line bus rapid transit link connecting Chatswood to Dee Why via Frenchs Forest</li> <li>• Encouraging increased district / regional bus trips through the provision of enhanced safe bus network and facilities</li> <li>• Relocating bus stops to areas better aligned to cater for access and mobility issues</li> <li>• Undertake a feasibility study on double-decker buses on key routes and related infrastructure requirements</li> <li>• Implement enhanced bus interchange and wayfinding / directional signage</li> <li>• Implementation of smaller buses to service remote areas and streets with narrow access within the LGA as identified under Council's Movement and Place Framework.</li> <li>• Investigate the expansion of The Loop bus system .</li> </ul> <p>Further projects may flow from this action.</p>	Short	Further funding required
20	Public transport and connectivity	Advocate to TfNSW for a bus route to be installed along Mowbray Road. Pending any consideration/approval for a bus route then consider a dedicated bus lane in peak hour times on Mowbray Road. Further projects may flow from this action.	Short	Funded
21	Public transport and connectivity	Work with TfNSW to identify and implement improvements and upgrades (including detailed designs), to the Chatswood and St Leonards interchanges so that they continue to be premium multimodal hubs, supporting increasing use of Public Transport. Further projects may flow from this action.	Long	Further funding required
22	Public transport and connectivity	Work with TfNSW to investigate possible improvements to traffic flow on the Pacific Highway by removing bus stops from through-traffic lanes and creating indented bus layby areas. Further projects may flow from this action.	Medium	Further funding required
23	Public transport and connectivity	<p>Work with TfNSW to investigate the provision of:</p> <ul style="list-style-type: none"> <li>• Dedicated bus lanes in peak hour times on Eastern Valley Way</li> <li>• Creation of bus-only traffic lanes at all signalised intersections on the Pacific Highway</li> </ul> <p>Further projects may flow from this action.</p>	Short	Further funding required
24	Accessibility	Develop and Implement Accessible Parking Space Policy and Guidelines	Medium	Funded

## CSP OUTCOME – A CITY THAT IS CONNECTED AND INCLUSIVE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
25	Accessibility	Set minimum objectives and standards for the provision of parking for people with disabilities	Medium	Funded
26	Accessibility	Work with TfNSW to bring mobility/disabled parking and motorcycle parking on footpath restrictions in line with other States. The main factor being fee exemption but time restricted. Further projects may flow from this action.	Short	Funded
27	Accessibility	Develop program of infrastructure, incorporating drink stations, toilets, rest stop areas and lighting for all Footpath capital works projects on key routes listed in Council's four-year capital works program.	Medium	Further funding required
28	Accessibility	Determine the provision of, and undertake an assessment on feasibility and safety of, existing and proposed designated accessible parking in Willoughby LGA in: <ul style="list-style-type: none"> <li>Retail Activity Centres</li> <li>Residential Areas</li> </ul>	Medium	Further funding required

## CSP OUTCOME – A CITY THAT IS LIVEABLE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
29	Vibrant and liveable places	Deliver multi-modal transport plans for recreational venues including: <ul style="list-style-type: none"> <li>Willoughby Park</li> <li>Bicentennial Reserve Oval</li> <li>provision of a shuttle bus for workers from outside the Chatswood CBD</li> <li>provision of shuttle bus workers from CBD to Artarmon Industrial Area</li> <li>Lane Cove National Park</li> </ul>	Long	Funded
30	Vibrant and liveable places	Work with TfNSW to bring mobility/disabled parking and motorcycle parking on footpath restrictions in line with other States. The main factor being fee exemption but time restricted. Further projects may flow from this action.	Long	Further funding required



## CSP OUTCOME – A CITY THAT IS LIVEABLE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
31	<b>Vibrant and liveable places</b>	Develop: <ul style="list-style-type: none"> <li>• Movement and Place Local Area Plans for all Local Town Centres; Chatswood CBD and St Leonards Strategic Centre, and</li> <li>• Vibrant Street Corridor Plans for Willoughby Road, Penshurst Street and Sailors Bay Road incorporating the movement and place framework, balancing the amenity of the street with the need for traffic movement; both which incorporate the principles aligned with Government Architect NSW and TfNSW Council's Movement and Place framework.</li> </ul>	Medium	Further funding required
32	<b>Safe places</b>	Complete a study and develop priority actions that create 40km/h shared zones in high pedestrian areas within Chatswood CBD; Artarmon; St Leonards; Northbridge and High Street;	Short	Further funding required
33	<b>Safe places</b>	Prepare a report on the feasibility of having CCTV cameras installed within the road reserve on designated streets within the Chatswood CBD.	Short	Further funding required
34	<b>Safe places</b>	Develop and deliver priority Local Road Safety Action Plan actions including: <ul style="list-style-type: none"> <li>• Road safety audit plan for Archer Street between Mowbray Street and Boundary Street</li> <li>• Develop and Implement an annual Transport Operations Performance Report by monitoring transport performance using throughput and service data such as road safety infrastructure measures and road safety technology initiatives.</li> </ul>	Short	Further funding required
35	<b>Safe places</b>	Continue the development and implementation of annual road safety education programs across the LGA relating specifically to: <ul style="list-style-type: none"> <li>• Child Restraint Checking Days</li> <li>• Community Road Safety Presentations</li> <li>• Motorcycles</li> <li>• Pedestrians</li> <li>• Safety Outside Schools</li> <li>• School Zones</li> <li>• Seniors Road Safety</li> <li>• Speeding</li> <li>• Supervising Learner Drivers</li> </ul>	Long	Funded

## CSP OUTCOME – A CITY THAT IS PROSPEROUS AND VIBRANT

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
36	<b>An efficient road network</b>	Complete all actions associated with dedication of road widening at Pacific Highway and Mowbray road at the Sydney Metro City & Southwest 'dive site'.	Short	Funded
37	<b>An efficient road network</b>	Investigate and prepare a report on the benefits of car share participation and carpooling including setting targets for these transport modes.	Medium	Further funding required
38	<b>An efficient road network</b>	Work with TfNSW to investigate the possibility of expanding peak am and pm tidal flow on the Pacific Highway north of Albert Avenue to Boundary Street. Further projects may flow from this action.	Short	Funded
39	<b>An efficient road network</b>	<p>Develop and complete priority actions highlighted in Chatswood CBD Traffic Study (2012) which include:</p> <ul style="list-style-type: none"> <li>• Converting the eastbound traffic lane of Victoria Ave to a bus lane (i.e. bus, taxi, motorcycle and cyclist permitted) between Anderson Street and Archer Street</li> <li>• Converting the kerb side parking in Victoria Avenue, prior to Archer Street Eastbound, to a taxi zone</li> <li>• Relocating the westbound bus stop in Victoria Avenue/ Neridah Street intersection from the approach side to the departure side of the intersection</li> <li>• Investigate options of a short term by-pass of the CBD</li> <li>• Undertake studies, in conjunction with TfNSW, that review and optimise the Chatswood interchange infrastructure;</li> <li>• Liaise with Westfield with regard to improving the operation and efficiency of the Westfield shopping centre car park in Victor Street;</li> </ul>	Long	Further funding required
40	<b>An efficient road network</b>	Work with the NSW Government to ensure that the various concerns of our community are addressed in relation to the Western Harbour Tunnel, Warringah Freeway Upgrade and Beaches Link projects.	Medium	Further funding required
41	<b>An efficient parking network</b>	<p>Complete, study and develop priority actions that:</p> <ul style="list-style-type: none"> <li>• Provide an appropriate number of car share spaces in the Chatswood and St Leonards CBDs and local centres</li> <li>• Provide appropriate level of taxi/rideshare spaces in the Chatswood and St Leonards CBDs and local centres</li> <li>• Evaluate access to/from industrial areas, especially those adjacent to residential areas, to identify potential improvements to the freight route network. This may include local area traffic management (LATM) schemes, tonnage limits, reassessment of land use zoning and limiting freight operating times in specific centres.</li> </ul>	Medium	Further funding required

## CSP OUTCOME – A CITY THAT IS PROSPEROUS AND VIBRANT

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
42	An efficient parking network	Review key travel pattern objectives and outcomes outlined in Willoughby Economic Development Study and develop formal innovative Parking Management Plans, which includes parking pricing, for Chatswood CBD and St Leonards strategic centres utilising information contained in Street Parking Strategy and offstreet parking locations.	Medium	Further funding required
43	An efficient parking network	Determine priority actions based on Street Parking Study recommendations that determines whether any increase in parking supply in CBD and Local Centres only is warranted; with the objective that any existing and future on and off road car parking is managed in a way that sustains and enhances the economic and environmental qualities of Willoughby.	Long	Further funding required
44	An efficient parking network	Undertake a review of fees and charges for on-street parking prices in Chatswood CBD that enables off-street parking to become a more attractive option for motorists and encourages freer flow of traffic on street and regular turnover of vehicles.	Medium	Further funding required
45	An efficient parking network	Undertake feasibility study of expanded commuter parking at Artarmon and advocate to the State Government for development.	Medium	Further funding required



## CSP OUTCOME – A CITY THAT IS EFFECTIVE AND ACCOUNTABLE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
46	Smart technology	Implement trial of Mobility as a Service (MaaS) in Chatswood CBD in conjunction with the program currently being trialled by TfNSW across Sydney. Trial to take into consideration walking, cycling, taking the bus, catching the train, driving, riding as a passenger, taxi, renting a car, carsharing, bikesharing, ridesharing, ridesourcing.	Medium	Further funding required
47	Smart technology	In conjunction with State Government (TfNSW), undertake study that investigates technology, infrastructure and policy requirements for use of drone technology with the view to applying in high traffic and pedestrian use areas. Further projects may flow from this action.	Medium	Further funding required
48	Smart technology	In conjunction with the State Government (TfNSW), undertake a study that highlights the cost and benefits of implementing wi-fi roll out at technology kiosks and at key transport nodes. Further projects may flow from this action.	Long	Further funding required
49	Smart technology	Work with TfNSW to consider improving traffic flow by: <ul style="list-style-type: none"> <li>• All traffic lights on non-state roads turned off / amber between the hours of 11pm and 4am.</li> <li>• Reduce the number of lights or phasing of lights on Pacific Highway.</li> <li>• Turn off red arrows in low flow locations or at low flow periods.</li> </ul> Further projects may flow from this action.	Short	Funded
50	Smart technology	Implement parking guidance system consisting of variable message boards across the Chatswood CBD to guide parking to off-street carparking stations.	Medium	Further funding required
51	Smart technology	Develop and Implement a GIS land use plan and development application monitoring and reporting system to track the locations and size of transport changes impacting on land use in Willoughby LGA.	Medium	Further funding required
52	Smart technology	Work with TfNSW to determine what supporting technology and infrastructure is needed to operate an automated shuttle within Willoughby LGA, how it interacts with other road users (pedestrians, cyclists, etc.) and how it integrates with the broader transport network. Further projects may flow from this action.	Short	Further funding required
53	Effective policymaking and regulation	Undertake a review of both on and off-street parking rates within Chatswood CBD, as part of fees and charges schedule, to incentivise EV, off peak utilisation, car sharing facilities at existing and proposed electric vehicle charging stations.	Short	Further funding required

## CSP OUTCOME – A CITY THAT IS EFFECTIVE AND ACCOUNTABLE

No.	FOCUS AREA	ACTION	TIME FRAME	FUNDED/ UNFUNDED
54	Effective policymaking and regulation	Continue the revision of Part C.4 'Transport Requirements for Development of Council's Development Control Plan (DCP) to: <ul style="list-style-type: none"> <li>• Reduce car parking rates for new developments close to railway stations</li> <li>• Increase provision of car share spaces</li> <li>• Increase bicycle and end-of-trip facilities</li> <li>• Provide charging infrastructure for electric vehicles</li> </ul>	Short	Funded
55	Effective policymaking and regulation	Implement driver awareness and education programs that will encourage drivers within the Chatswood CBD to utilise real-time digital inventory of on-street parking supply and information that can better inform them of the location and availability of car parking spaces and time and fee restrictions. This education program to align itself with the timing of implementation of parking guidance (technology) app.	Medium	Further funding required
56	Effective policymaking and regulation	Revise the schedule of works program for Voluntary Planning Agreement policy to incorporate sustainable active and public transport options.	Medium	Funded
57	Effective policymaking and regulation	Work with the NSW Government and other relevant stakeholders for a Working Group to be set up incorporating representatives of all Greater Sydney Councils, including Willoughby, to review all proposed new and/or changes to traffic and transport legislation. Further projects may flow from this action.	Short	Further funding required
58	Effective policymaking and regulation	Undertake a review of Council's DCP to incorporate consent provisions restricting heavy vehicle (freight) access in the CBDs and local centres during peak am and pm periods and the specification of maximum vehicle sizes.	Medium	Further funding required