

# INTEGRATED TRANSPORT AND LAND USE STRATEGY

The Hills Shire Council | October 2019



**THE HILLS**  
Sydney's Garden Shire



The *Integrated Transport and Land Use Strategy 2019* was adopted by Council on 22 October 2019, Minute No.565.

This Strategy represents the collaboration of information from a number of sources, including NSW Government plans and policies, and plans and policies of The Hills Shire Council.

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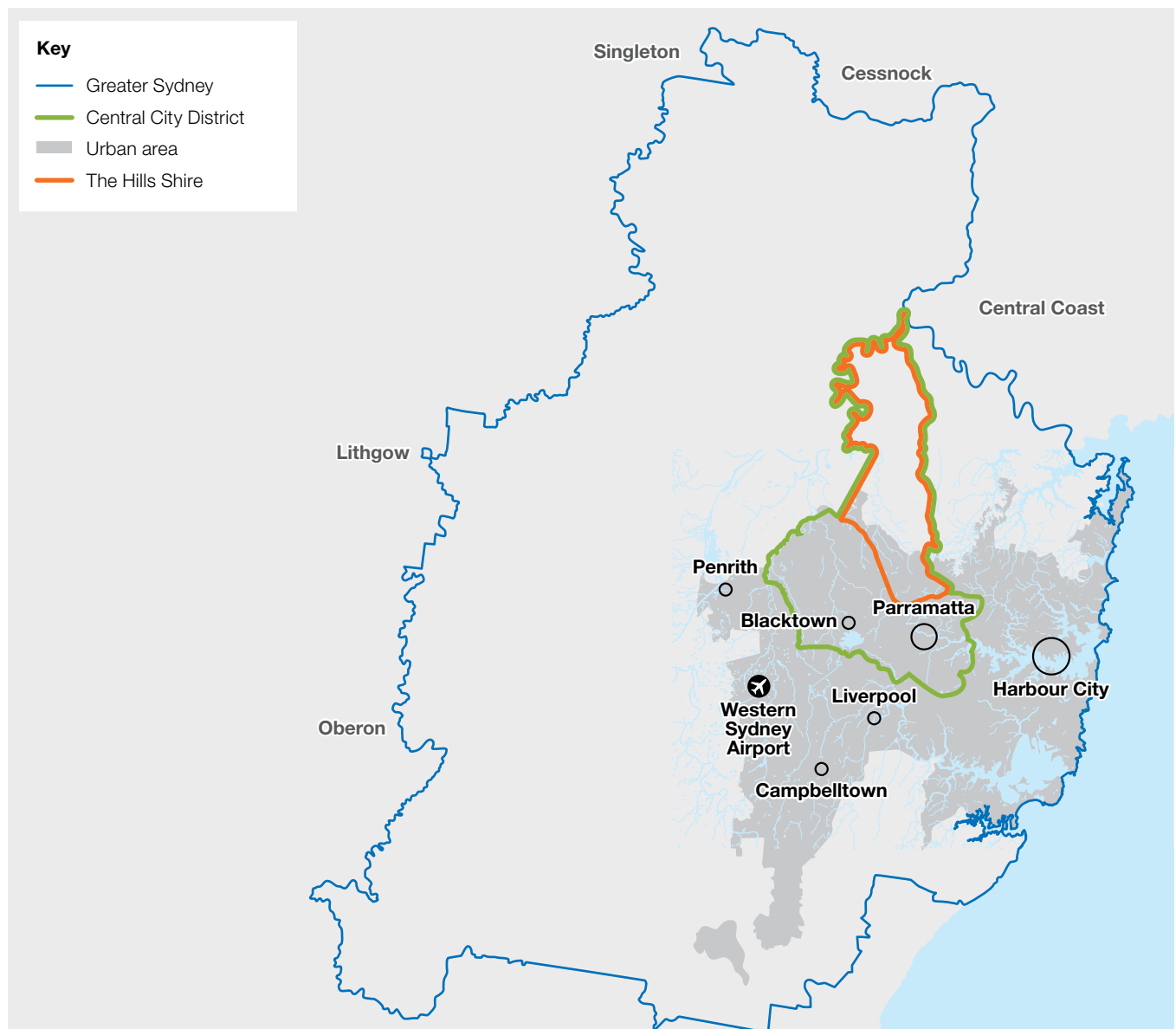
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The Hills Shire is a local government area (LGA) in the north west of Greater Sydney, around 30 kilometres from Sydney CBD. Spanning 38,500 hectares, it forms part of the Central City District, along with the Blacktown, Cumberland and City of Parramatta LGAs. The Shire includes land between Baulkham Hills and West Pennant Hills in the south, to Wisemans Ferry in the north.

The Hills Shire was home to approximately 162,500 people in 2016. We are planning for an 80 per cent increase in population by 2036, with the population of 290,900 people needing a mix of housing, access to services, shopping and public transport, and opportunities to connect with each other, with nature and with the rest of Greater Sydney.

While connected to the Central River City, centred around Parramatta, The Hills has strong links to the Eastern Harbour City and will grow connections to the future Western Parkland City and the Aerotropolis around the planned Western Sydney International Airport.





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Image courtesy of Transport NSW



# Executive summary

As the population and economy of The Hills Shire grows, the way people and goods move around, into and out of the Shire is shifting. The completion of Sydney Metro Northwest has created new, modern public transport connections, while also acting as a catalyst for population growth centred around station precincts and supported by walking and cycling links.

While this is a gamechanger for people living within easy access of the new Sydney Metro services, there remains a number of existing and growing areas that are not serviced by public transport. Traffic congestion is an issue on several key routes, parking demand is increasing in key centres, and the Shire's high car ownership rates mean that nearly 80 per cent of trips are made by private vehicle.

The integration of transport, infrastructure and land use planning is critical to achieving the vision of the 30 minute city, where people live within 30 minutes of their nearest metropolitan or strategic centre by public transport. It also influences how people feel about their local places – how they move to and through a place influences their interactions, perceptions, choices and general enjoyment.

This *Integrated Transport and Land Use Strategy 2019* aims to address issues in the current network, and plan for a sustainable future. Gains in liveability and productivity will require new housing to be well connected to where people need to go and jobs and freight networks need to be easily accessible to allow efficient movement of people and goods to their respective markets.

It highlights several strategic local and regional transport infrastructure projects to best support expected growth to 2036 and beyond:

- a mass transit link between Norwest and Parramatta to support jobs growth in the Norwest Business Park and provide a meaningful connection to Parramatta CBD
- the North South Rail link to provide Hills residents and workers with a connection to the developing Western Sydney International Airport, the broader Western Sydney area and an alternative public transport option to Parramatta
- a public transport corridor between Box Hill and Rouse Hill
- the Outer Sydney Orbital which will be critical in the long term success of the Box Hill Business Park and Annangrove Road Industrial Area
- an upgrade of Annangrove Road to an arterial road, providing a bypass at Round Corner, Dural to address its role as a carrier of regional traffic
- grade separation at the intersection of Windsor Road, Old Northern Road and Seven Hills Road at Baulkham Hills
- bus priority measures on local roads to assist in facilitating an effective and efficient bus network.

We have developed this *Integrated Transport and Land Use Strategy 2019* around five planning priorities that themselves reflect the planning priorities of our Local Strategic Planning Statement *Hills Future 2036*. These priorities are:

- **build strategic centres to realise their potential and renew and create great places** by coordinating the planning for transport, infrastructure and land use to shape and support population growth in The Hills, allowing residents to benefit from the 30 minute city and a network of great places
- **influence travel behaviour to promote sustainable choices** through measures such as managing demand for car parking and supporting car sharing
- **plan for convenient, connected and accessible public transport to shape and support growth**, as detailed in the local and regional transport infrastructure projects noted above
- **expand and improve the active transport network**, with a focus on walking and cycling and integrated planning with our *Recreation Strategy 2019*
- **plan for a safe and efficient regional road network** by working collaboratively to implement key priorities relating to the movement of people and goods around and through the Shire.

As the overall strategic approach to the Shire's transport network planning, the *Integrated Transport and Land Use Strategy 2019* also supports the commitments in our Community Strategic Plan, as expressed in the Hills Shire Plan, as well as the objectives of the higher-level *Central City District Plan* and *Greater Sydney Region Plan*.



# INTRODUCTION

This *Integrated Transport and Land Use Strategy 2019* recognises that integrating land use planning with a new and improved transport, traffic and movement network will help to shape a sustainable future for The Hills Shire

Our planning occurs in the context of a future population of 290,900 people by 2036 and the requirement for an additional 38,000 dwellings between 2016 and 2036.

This Strategy refreshes the Integrated Transport Direction, prepared in 2010, within the context of the *Greater Sydney Region Plan* and *Central City District Plan* and substantial transport investment, including Sydney Metro Northwest.

Image courtesy of Transport for NSW



## Purpose

The *Integrated Transport and Land Use Strategy 2019* establishes the basis for strategic planning of the Shire's traffic, transport and movement network to 2036. It informs the planning priorities and five-year actions in *Hills Future 2036*, our Local Strategic Planning Statement, and provides the finer detail about how we will achieve our vision for a cohesive transport network that meets the needs of the existing and future population.

To shape exceptional living, working and leisure places where expected growth brings vibrancy, diversity, liveability and prosperity for The Hills.

### Vision – Hills Future 2036

Achieving the vision, as well as the aspiration of a 30-minute city, as defined in the Greater Sydney Region Plan, requires us to integrate the way we plan for transport, infrastructure and land uses. We will need to collaborate with, and seek commitment from, all stakeholders including the community, the NSW Government, business and development industry.

The way we move within, through and around spaces influences our experiences and travel choices. Coordinated consideration of transport, infrastructure and land use priorities enables the creation of great places and spaces and facilitates effective movements that support residential and economic growth.

## Developing the Strategy

The *Integrated Transport and Land Use Strategy 2019* complements The Hills Shire Plan, including the Community Strategic Plan, and will contribute to the themes of building a vibrant community and prosperous economy, proactive leadership, shaping growth and delivering and maintaining infrastructure.

It was informed by an understanding of the characteristics of the Shire's transport network and how residents and workers move around the Shire. These characteristics are assessed alongside a broader strategic context, prevailing trends, likely demands on the transport network and its capacity to respond to growth and change.

In developing the Strategy we:

- reviewed NSW Government policies including the *Greater Sydney Region Plan*, *Central City District Plan* and *Future Transport 2056*
- investigated global and regional trends that impact the demand for and use of various transportation modes
- analysed demographic indicators and projections to provide insights into the current and future demands on the transport network.

Additional documents supporting this Strategy and *Hills Future 2036* can be viewed at [www.thehills.nsw.gov.au](http://www.thehills.nsw.gov.au)



# 2

## STRATEGIC CONTEXT

Understanding the strategic context ensures effective implementation of priorities and actions.

We have a legislative obligation to implement the objectives and vision of NSW Government strategic directions and other policies, as well as an obligation to The Hills community to create a place where people want to live, work and play.

## 2. STRATEGIC CONTEXT

Figure 1: Links to the region and district plans



## *Hills Future 2036*

communicates how we will address the priorities and actions of the Region Plan and District Plan at a local level. It is supported by background strategies, including this one, undertaken in key areas to provide the vision for the future of The Hills Shire.

**Figure 2: Hills Future 2036 and supporting strategies**



We have reviewed the State and local strategic planning framework and recognise that The Hills Shire will be integral in Greater Sydney and will feature places for people, accessible and walkable neighbourhoods and a diverse supply of new housing with effective transport connections to employment opportunities and services. The key documents in this framework are:

## State level

- *Greater Sydney Region Plan*
- *Central City District Plan*
- State planning instruments
- North West Rail Link Corridor Strategy.

## Local level

- *Hills Future 2036*
- Hills Shire Plan, including the Community Strategic Plan
- The previous Hills Local Strategy
- The Hills Corridor Strategy
- Local planning instruments.



# TRANSPORT IN THE HILLS

Integrated transport and land use planning requires us to consider the characteristics of The Hills Shire's transport network; how it is used, how often, for how long and by whom; and expected growth and change in the Shire's urban and rural areas.

The way we move in and around urban environments is influenced by global and regional trends that influence where and how we chose to live, work and play. We keep these trends in mind when we analyse forecasts of the Shire's growth and change, and how the community and business currently use the transport network.

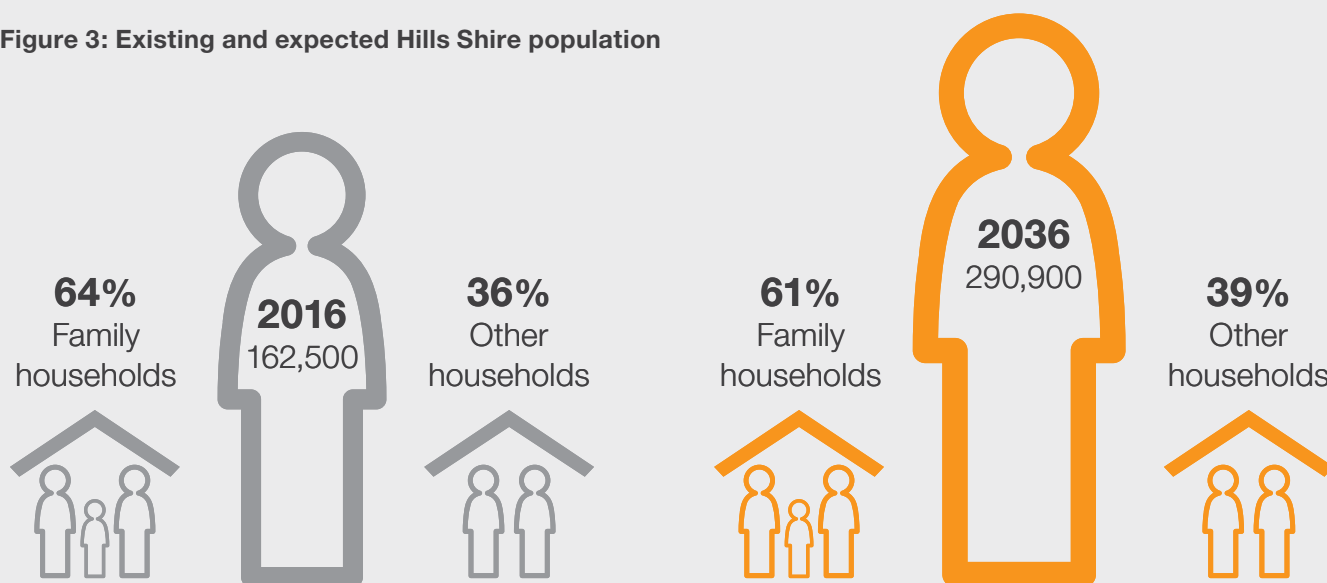
These trends include:

- Greater Sydney's shifting structure to a 'metropolis of three cities', which creates opportunities to improve connections to realise the ambition of a 30-minute city, where people live within 30 minutes by public transport of their nearest metropolitan or strategic centre
- innovation and technology in the private vehicle market, which will influence fuel choices in the short term and change the way people move in the longer term
- disrupters and the sharing economy, which challenge traditional transport models and influence demand for private vehicle ownership
- the increase in online and digital interactions, which highlights the need for better transport connections and flexibility for local distribution facilities to support freight logistics activities.

## Growth in The Hills 2016 to 2036

### POPULATION

Figure 3: Existing and expected Hills Shire population



Source: NSW Department of Planning, Industry and Environment population forecast

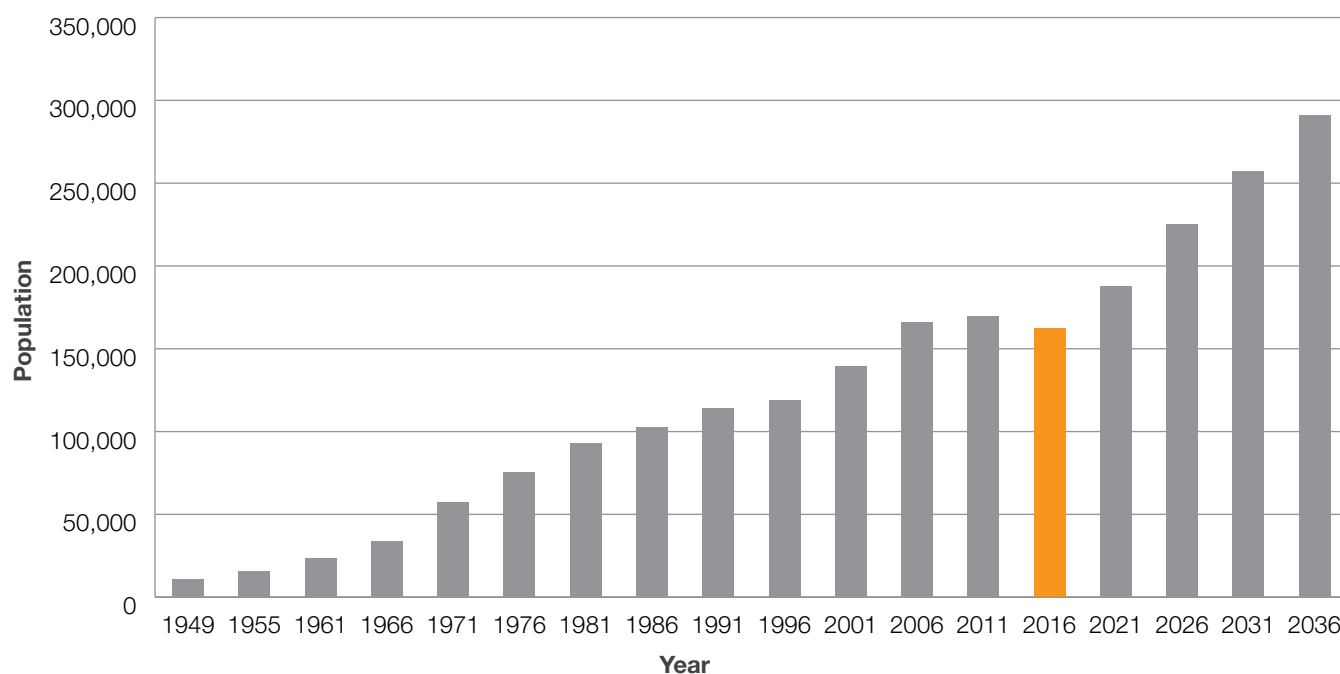
Between 2016 and 2036, The Hills population will grow by around 80 per cent, from around 128,000 people, to approximately 290,000 people by 2036, equivalent to a 2.1 per cent annual growth rate. Almost all of this growth will be contained within the Shire's urban areas, maximising efficiency of existing and planned infrastructure as well as minimising the impact on environmentally sensitive lands within the rural and northern parts of the Shire.

The expected population growth in The Hills represents 23 per cent of all growth expected across the Central City District, and seven per cent of the expected growth across Greater Sydney.

Development will continue in the North West Growth Area and the Balmoral Road and Box Hill North greenfield areas, and around the Sydney Metro station precincts.



**Figure 4: Population growth and forecast 1949–2036**



Source: ABS data and Department of Planning, Industry and Environment Population Projections  
 Note: Population adjustment in 2016 and beyond relate to LGA boundary changes around Carlingford.



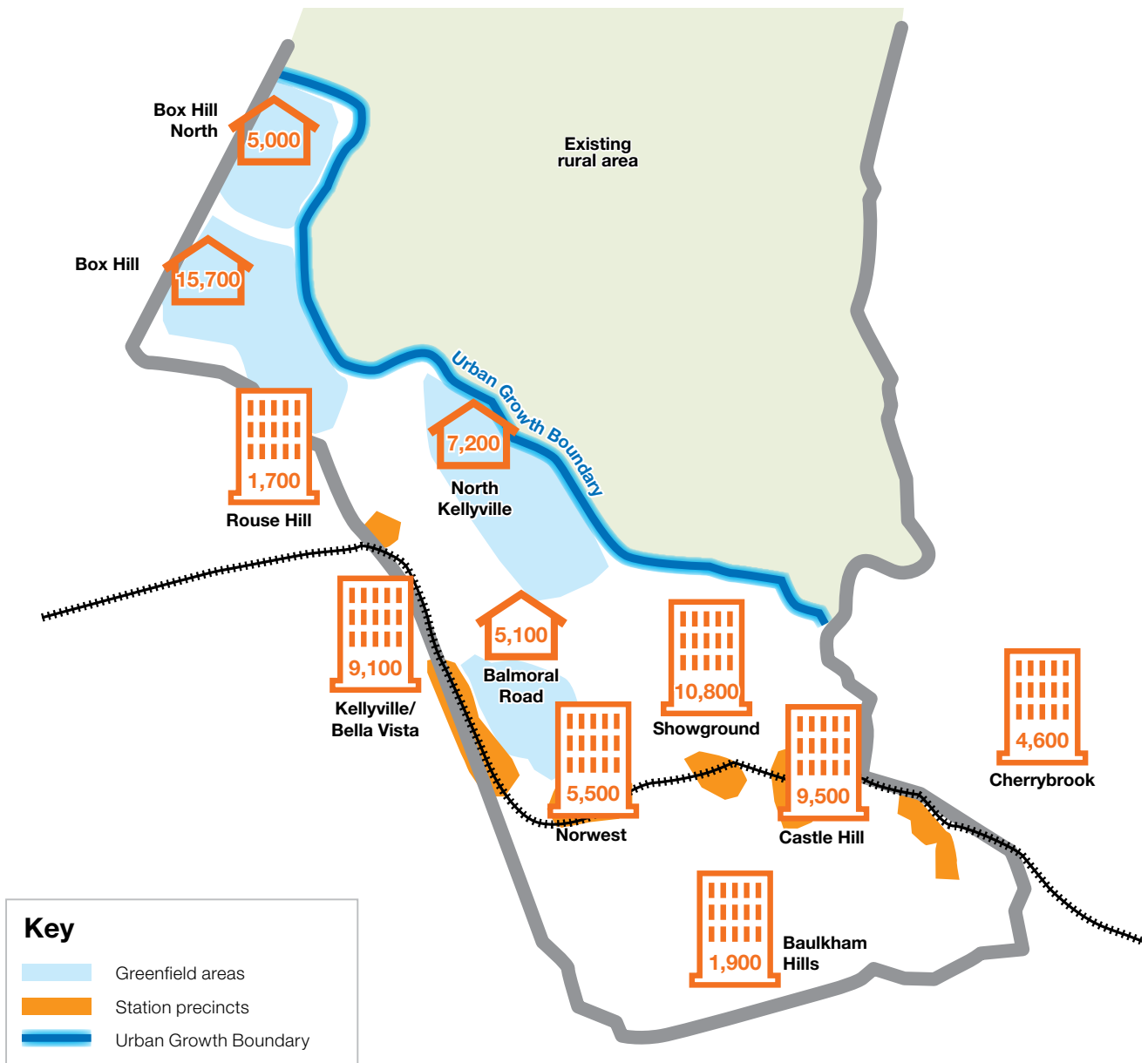
Almost all of this growth will be contained within the Shire's urban areas, maximising efficiency of existing and planned infrastructure.

## Where people will live

We are planning for an additional 38,000 dwellings between 2016 and 2036. Many of the new homes built over the next 20 years will be high density dwellings

located close to public transport hubs. The greenfield areas will continue to provide low and medium density housing.

**Figure 5: Total development capacity of station precincts and greenfield areas**

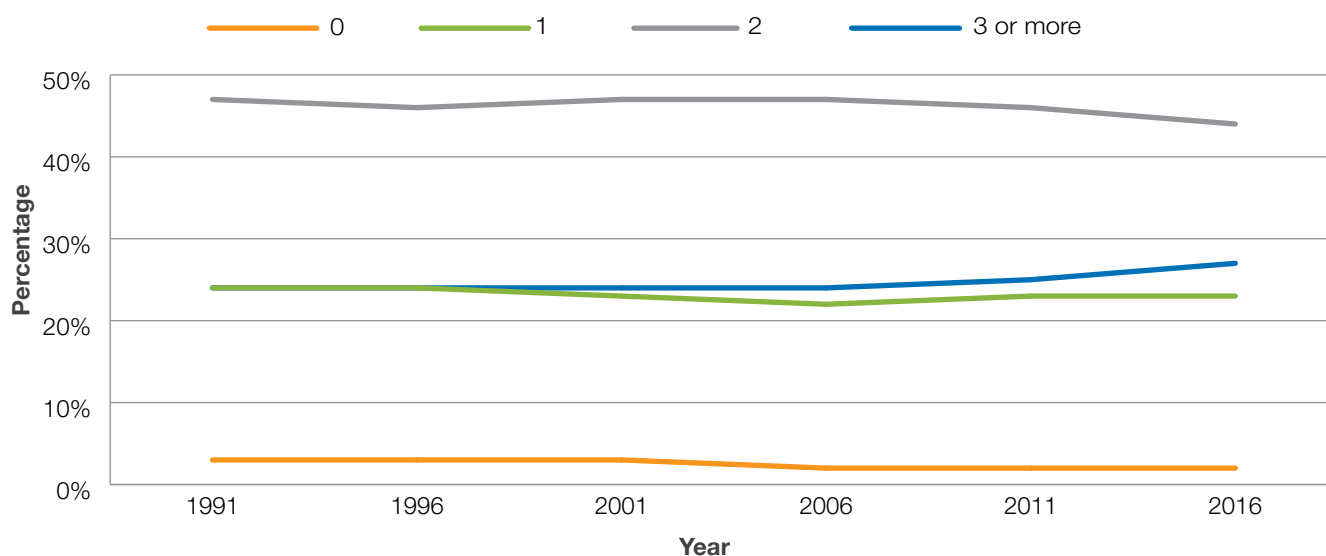


## How people travel

In 2019, there are approximately 100,000 registered motor vehicles across the Shire, an average of 2.1 per household. The number of households with three or more cars increased by nearly two per cent between 2011 and 2016, possibly reflecting demographic trends including increasing household incomes, increasing household size and changing household structures, such as adult children living at home for longer.

High levels of car ownership also reflect the Shire's family-dominant demographic. While families are generally smaller, with an average of 1.8 children per household in The Hills, increasingly, more families consist of two or more working parents who own at least two cars. The commute to work often incorporates other trips, such as the journey to school, which traditionally would have been undertaken on foot or by bike (active transport) or public transport. Car travel is generally perceived to be more convenient as well as perhaps safer, particularly for younger school children (Active Healthy Kids Australia 2015).

**Figure 6: Number of vehicles per household**



Source: ABS Census 1991–2016

### 3. TRANSPORT IN THE HILLS

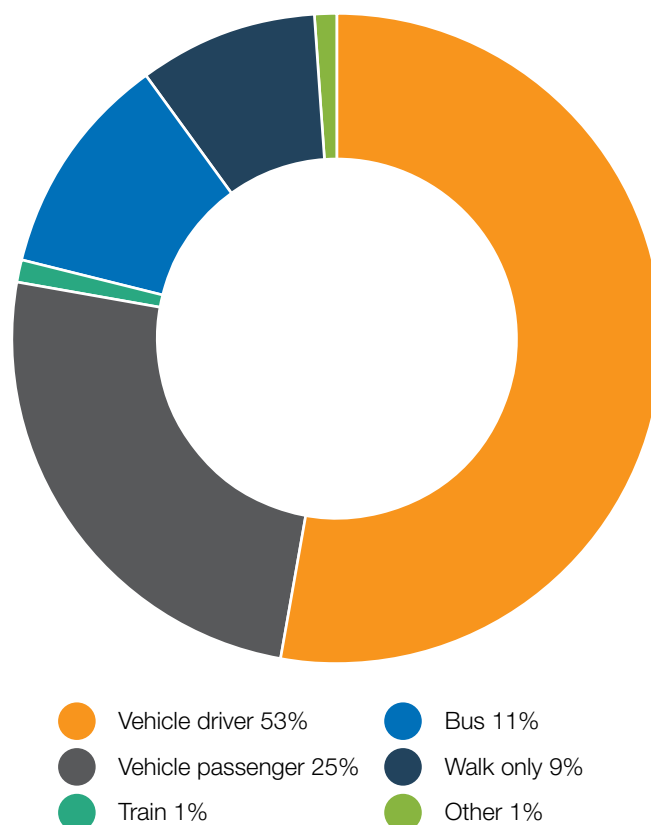
Nearly 80 per cent of all trips that originate in The Hills are made by private vehicle either as a passenger or driver. Increases in bus numbers and changes to routes and timetables have seen an increase in patronage on bus services, over time especially around Castle Hill, where higher density developments close to the bus interchange gives more people more convenient access to public transport.

We expect Sydney Metro Northwest to influence the travel behaviour of residents and encourage a further shift to train travel as people living within an 800-metre walk of their nearest station take advantage of the convenient service to the Sydney CBD. More people are likely to shift to public transport once bus services and active transport networks are improved and integrated into the Sydney Metro corridor.



We expect Sydney Metro Northwest to influence the travel behaviour of residents and encourage a further shift to train travel.

**Figure 7: Mode share – The Hills Shire**



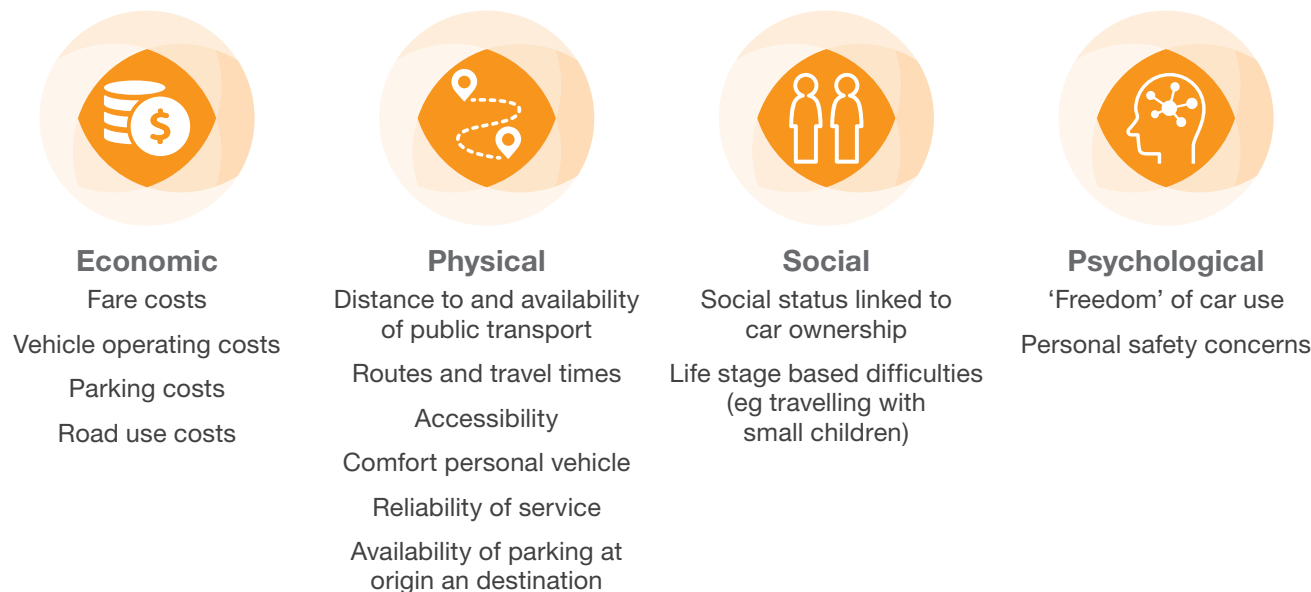
Source: Transport for NSW – Household Travel Survey 2016



# Increasing public and active transport use

The choices people make about transport depend on many factors.

Figure 8: Factors influencing mode choice



Encouraging people to change the way they travel requires us to collaborate with other councils, the NSW Government and transport providers. Our control and influence over transport projects lessens as the size of the transport project increases – often in these instances greater control rests with the NSW or Australian governments. In these situations, our role is that of an advocate for our community and businesses. Table 1

indicates where we can control or influence people's travel choices.

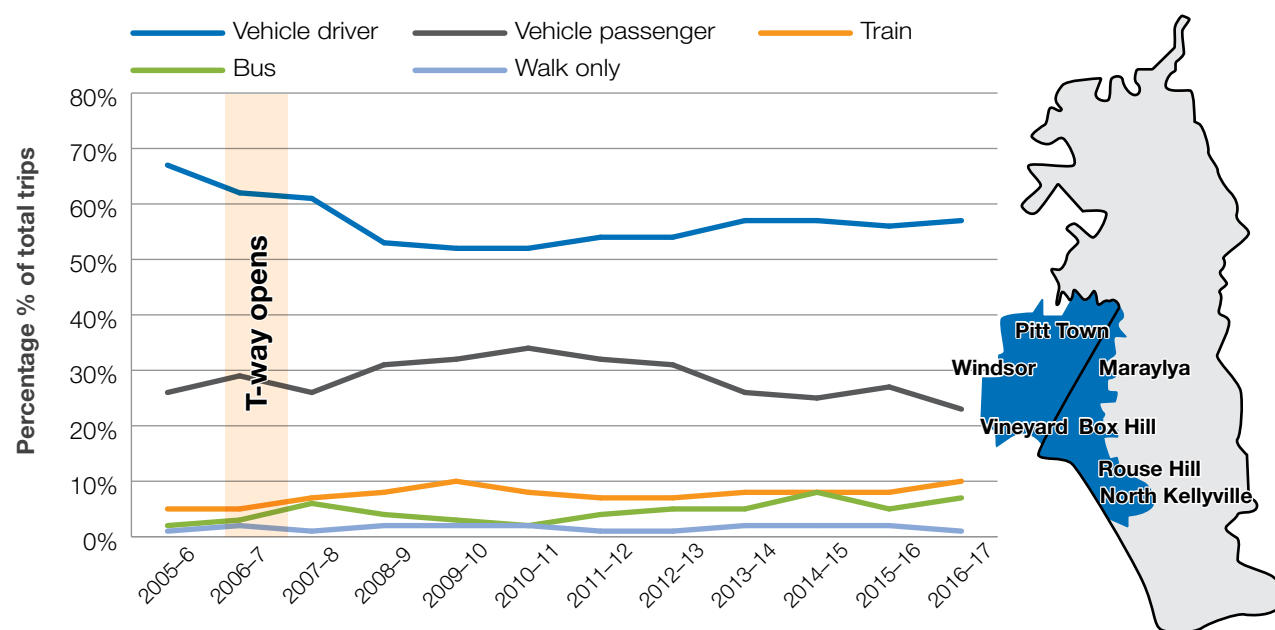
Investment in public transport infrastructure significantly shifts the way people travel. After the introduction of the T-way in 2007 there was a rapid shift towards buses and a decrease in private vehicle use in the north west urban areas of The Hills, as indicated in Figure 9.

Table 1: Areas of control and influence

Areas of control	Areas of influence
We may enforce <b>parking costs</b> in public car parks to manage parking demand.	We lobby the NSW Government <b>for improvements to public transport</b> and State road infrastructure, and seek grants and partnerships for local projects.
We control the <b>availability of car parking</b> by setting car parking rates in development control plans (DCPs) for new development.	We build relationships with <b>transport providers</b> to advocate for improvements to routes and service provision.
We can influence people's travel choices for trips under five kilometres by increasing <b>accessibility</b> to safe footpaths and cycleways and integrating them within the wider travel network.	We <b>educate</b> residents on alternative transport modes and benefits.

### 3. TRANSPORT IN THE HILLS

**Figure 9: Mode share – McGraths Hill SA3**

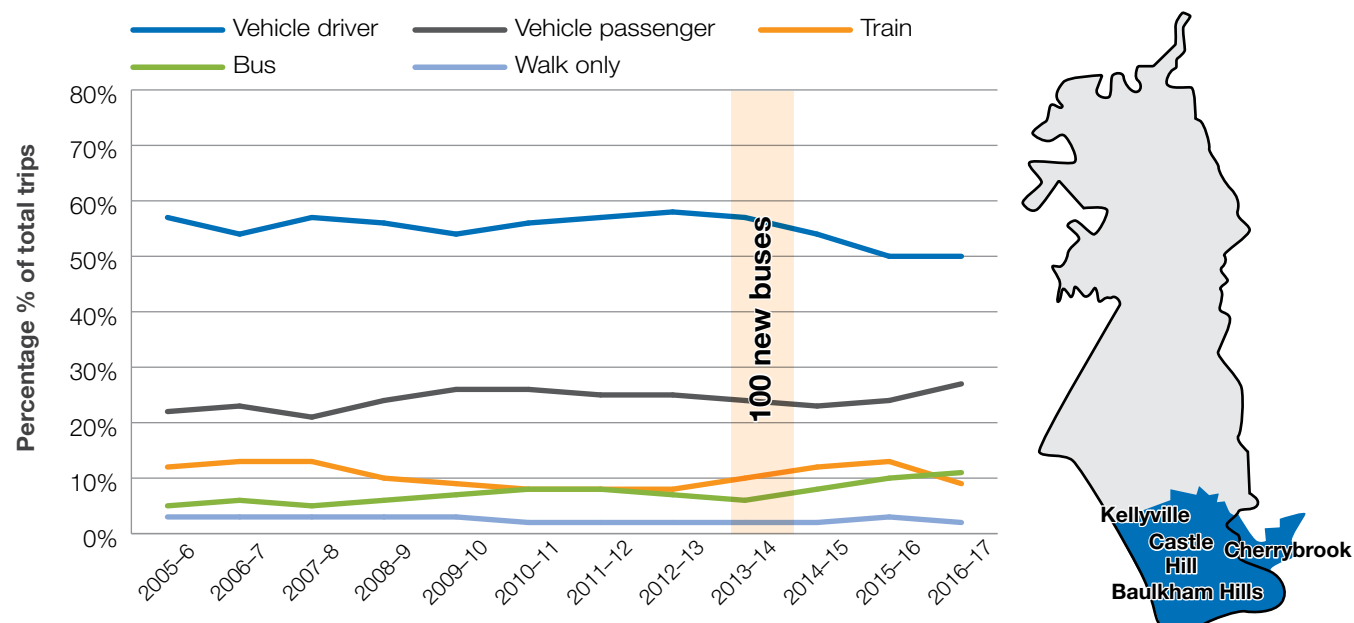


Source: Transport for NSW – Household Travel Survey 2016

However, as the number of households increased in North Kellyville, Rouse Hill and Box Hill, which were not yet fully serviced by the bus network, we have seen a gradual increase in vehicle use. Despite this, bus patronage continues to increase with small fluctuations.

Additional buses and improved servicing in Castle Hill and Baulkham Hills from 2014 saw a significant shift from private vehicles towards buses, assisted by increased higher density dwellings close to both town centres (see Figure 10).

**Figure 10: Mode share – Baulkham Hills SA3**



Source: Transport for NSW – Household Travel Survey 2016

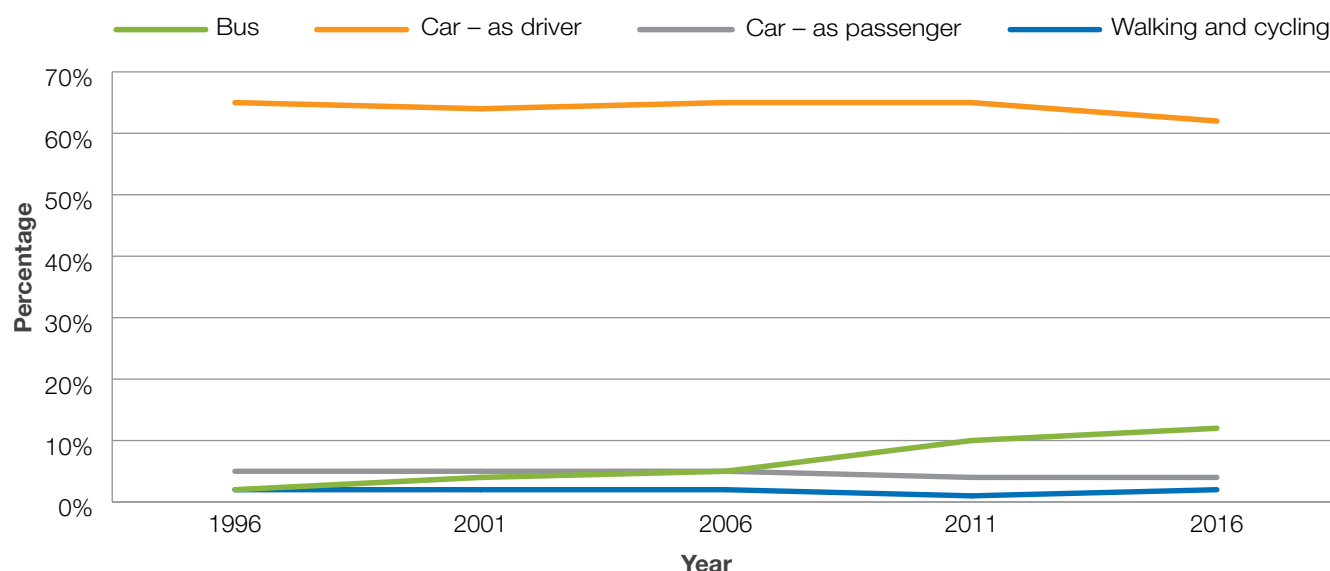


## Commuting

Thirty-nine per cent of The Hills local workforce lives within the Shire, yet nearly 70 per cent of working residents work outside The Hills. Understanding where residents choose to work and where workers live helps to understand travel choices and infrastructure requirements.

Residents travelling outside the Shire for work mainly work in Sydney CBD and Parramatta, where the types of highly skilled and technical jobs align with the levels of education seen in the resident population. The local workforce, which has a higher proportion of lower skilled jobs than the resident workforce, draws primarily from The Hills and Blacktown, with contributions from Parramatta and Hornsby local government areas.

**Figure 11: Journey to work mode share**



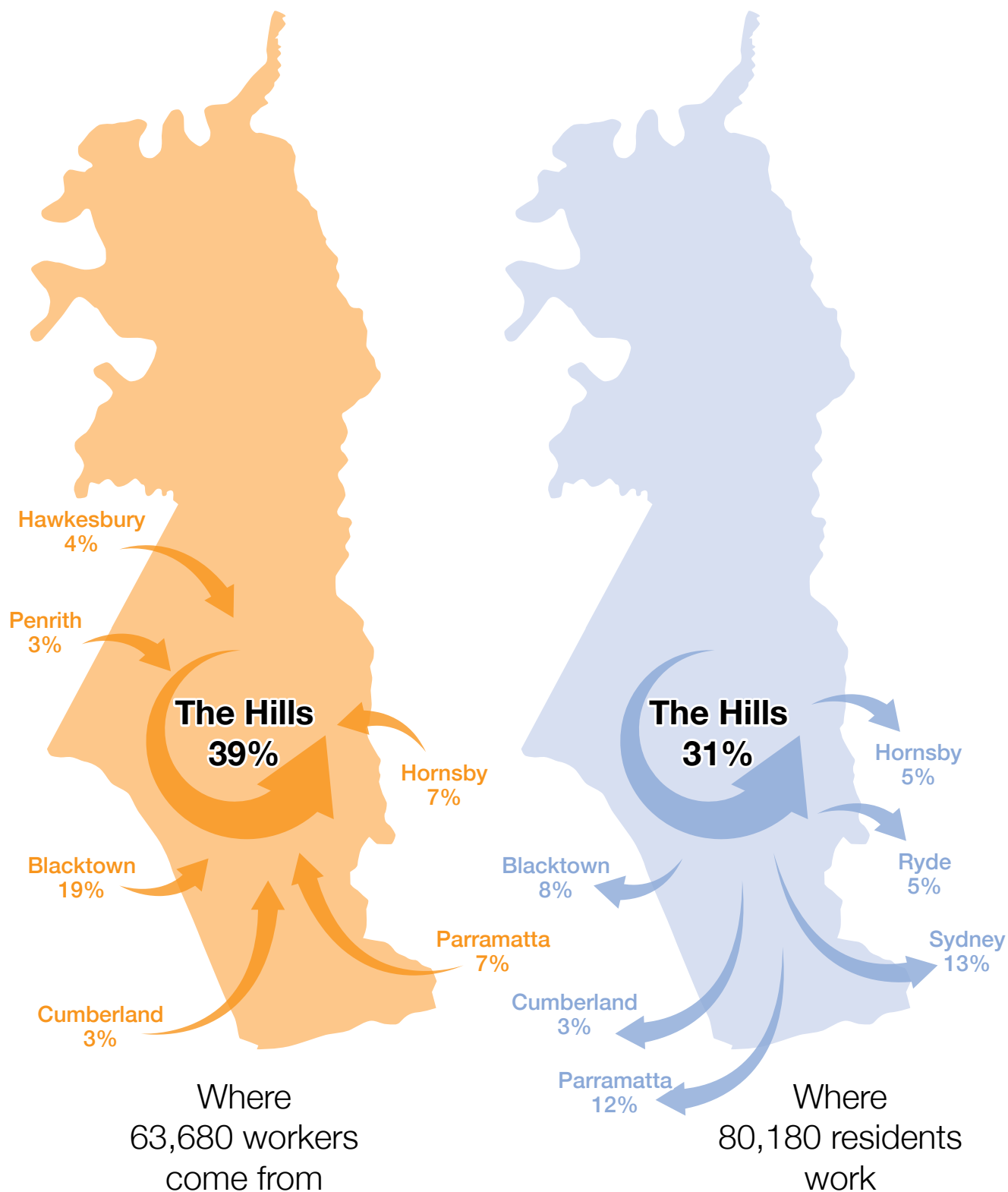
Source: ABS Census data 2016

Over the last 20 years, while the number of people travelling to work in their own vehicle has increased, the increase in bus patronage has seen the overall proportion of trips by private vehicle decline. Improvements in active transport use are yet to be realised; here, the potential lies in the renewal of Sydney Metro station precincts that will provide access to jobs and services within a walkable distance from people's homes.

To support this, we will actively target industries that complement residents' skills, particularly in knowledge-based industries including health, education, finance and professional and scientific services. The *Productivity and Centres Strategy 2019* articulates our vision for employment and centres to 2036 and provides detail on employment supply and future demand for jobs and skills.



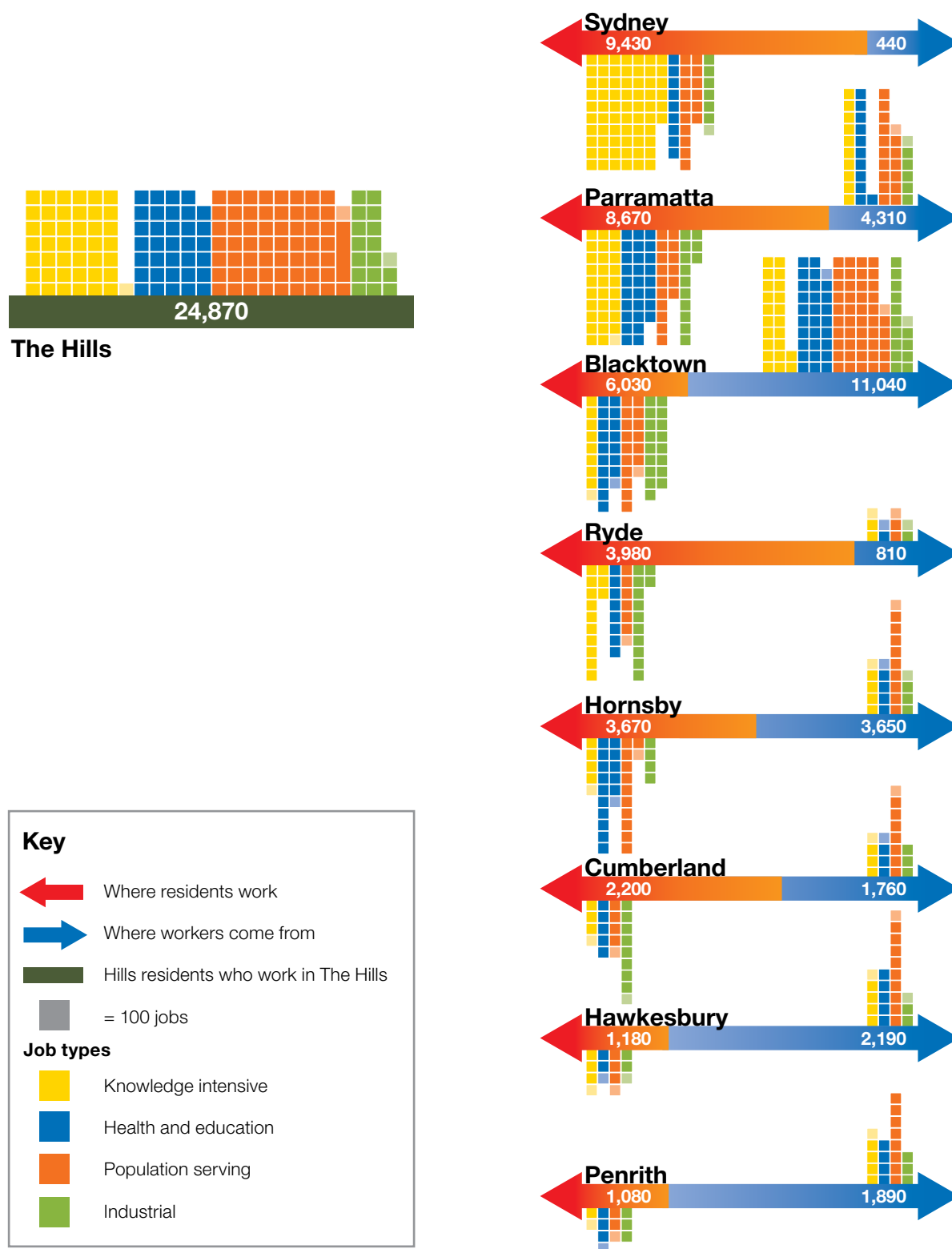
Figure 12: Residents' place of work and workers' place of residence by LGA



Source: ABS Census data 2016



Figure 13: Job types of resident workers and local workers (top eight locations)



Source: ABS Census data 2016

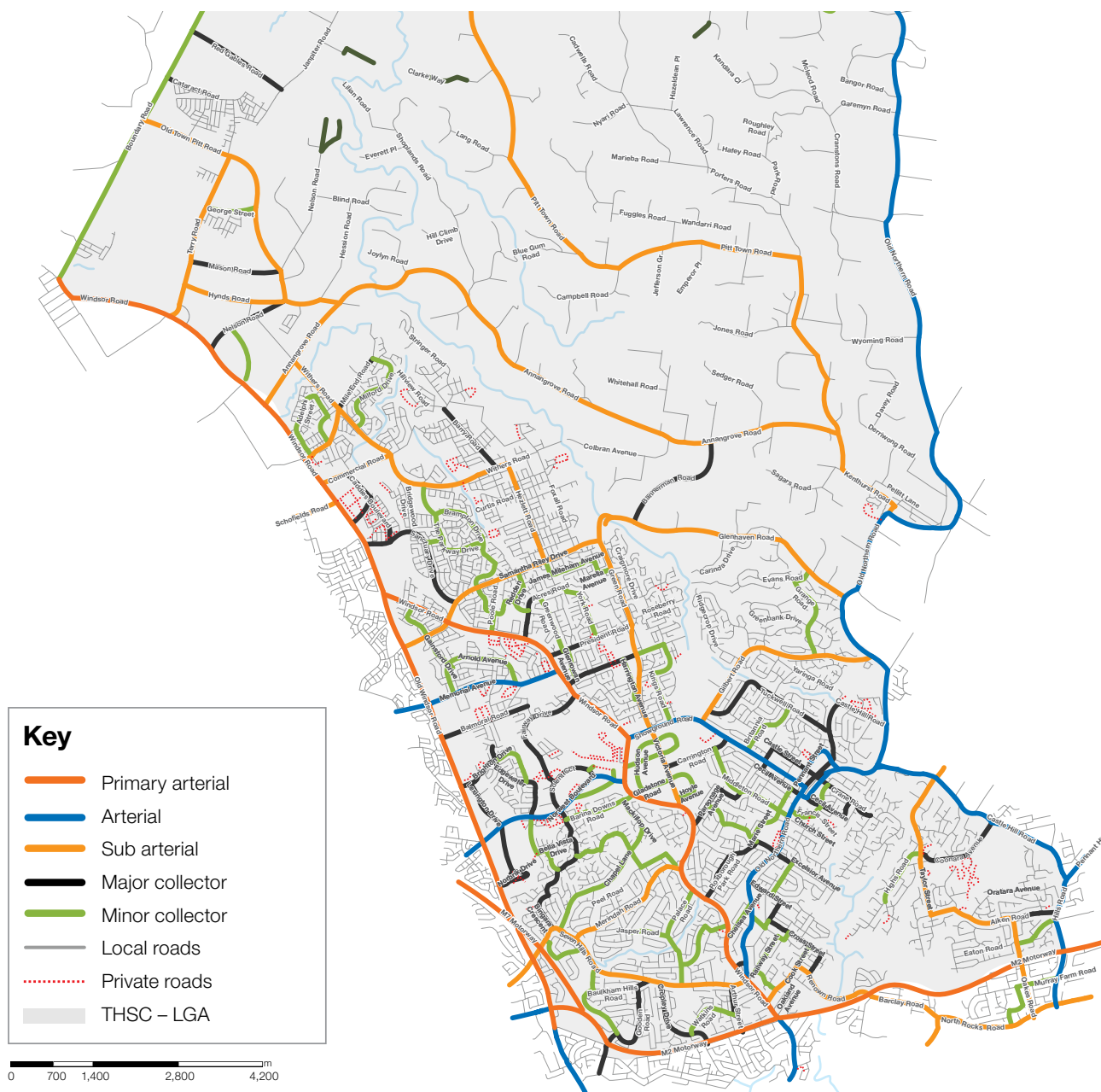
## Road network

The Shire's road network is supported by State roads on the eastern, western and southern boundaries including Old Northern Road, Windsor Road, Old Windsor Road, and the M7 and M2 motorways. Part of Windsor Road transects the Shire's urban area north to south, supporting local and regional traffic and providing a connection to Parramatta.

Other arterial roads, including Memorial Avenue, Old Northern Road, Showground Road and Norwest Boulevard provide east-west connections and feed traffic to major roads with greater capacity.

The regional road network experiences serious congestion, and this is likely to continue as the population and economy grows. Without significant investment in regional road infrastructure, traffic congestion will remain a barrier to housing and economic development.

**Figure 14: The Hills Shire road network**



## Public transport

Sydney Metro Northwest provides high-speed mass transit between Tallawong Station and Chatswood, taking in the suburbs of Rouse Hill, Kellyville, Bella Vista, Norwest, Castle Hill and Cherrybrook.

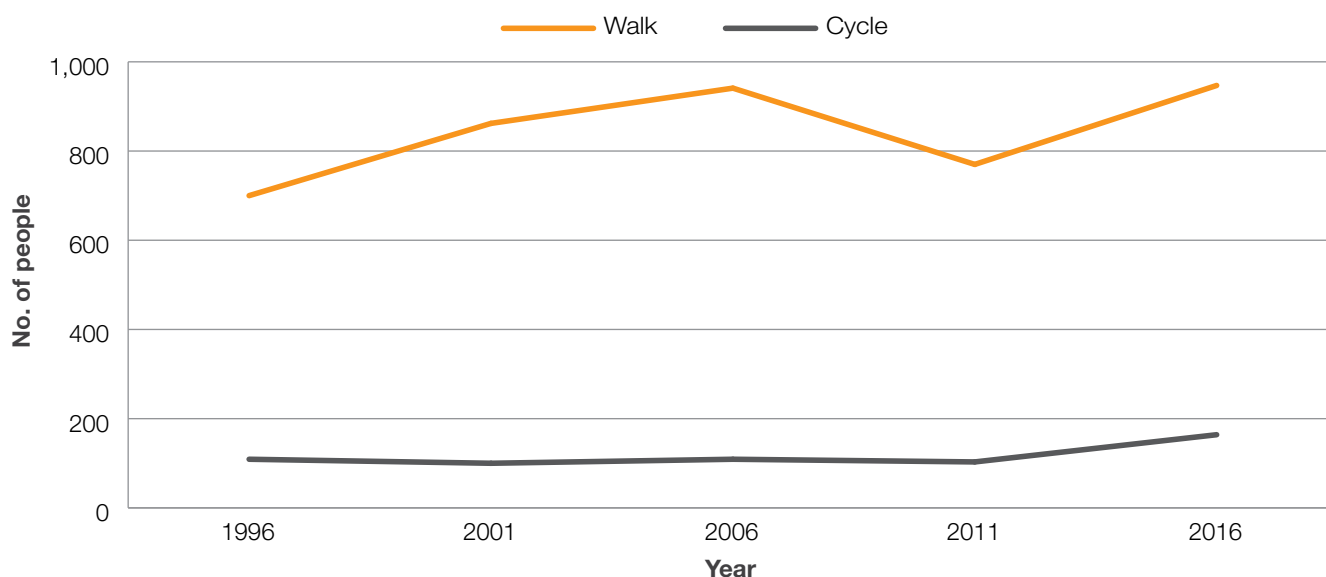
The bus network remains essential to move people to and from the Shire to areas such as Blacktown and Parramatta centres, while also providing services from areas without direct access to Sydney Metro Northwest. Services and routes have been amended to support the Metro, including on-demand bus services around Bella Vista, Norwest and Hills Showground stations.

## Active transport (walking or cycling)

Walking and cycling currently account for approximately 10 per cent of trips made in The Hills. Despite a drop in walking in 2011, both walking and cycling are increasing in popularity as an option for commuting to work. This corresponds with improvements to the Shire's active transport network and a greater diversity of employment options close to residential areas.

We provide an extensive network of footpaths and on and off-road cycleways, although there are some barriers to use, including topography, wayfinding and gaps in connections to places like schools and shops. Our *Recreation Strategy 2019* identifies improvements to the regional and local active transport network.

**Figure 15: Walking and cycling to work**



Source: ABS Census data 2016



# 4

## PLANNING PRIORITIES

This section outlines our priorities for the transport network and how we will achieve these priorities. The planning priorities will guide how we plan for the integration of the Shire's transport network with different centres and land uses, as well as how we can influence a change to more sustainable travel in the next five years and beyond. The priorities are:

- build strategic centres to realise their potential and renew and create great places
- influence travel behaviour to promote sustainable choices
- plan for convenient, connected and accessible public transport
- expand and improve the active transport network
- plan for a safe and efficient regional road network.

Image courtesy of Transport for NSW

# Build strategic centres to realise their potential and renew and create great places

This relates to Planning Priorities 2 and 9 in *Hills Future 2036*.

## Rationale

Balancing the need to move people and goods with the need for vibrant, liveable communities can be difficult in a car-dominant area like The Hills. There is a general expectation that travel by private vehicle is available for most trips and is convenient and expedient.

*Future Transport 2056* adopts a Movement and Place Framework to guide decision-making around how transport planning aligns with the planning for different places.

The Framework relates to how we classify the road network. The roads hierarchy is based on the levels of service each road provides, accounting for requirements such as traffic volumes, speed and load limits, ride quality and pavement durability.

This hierarchy aims to reflect the preferred movement of vehicles and guides road managers, users and land developers as to our intended road network objectives. The design of physical attributes such as width, pavement strength, surfacing and other design elements are determined by its road classification. The road hierarchy complements the Movement and Place Framework and will inform public domain plans for areas experiencing change and renewal.

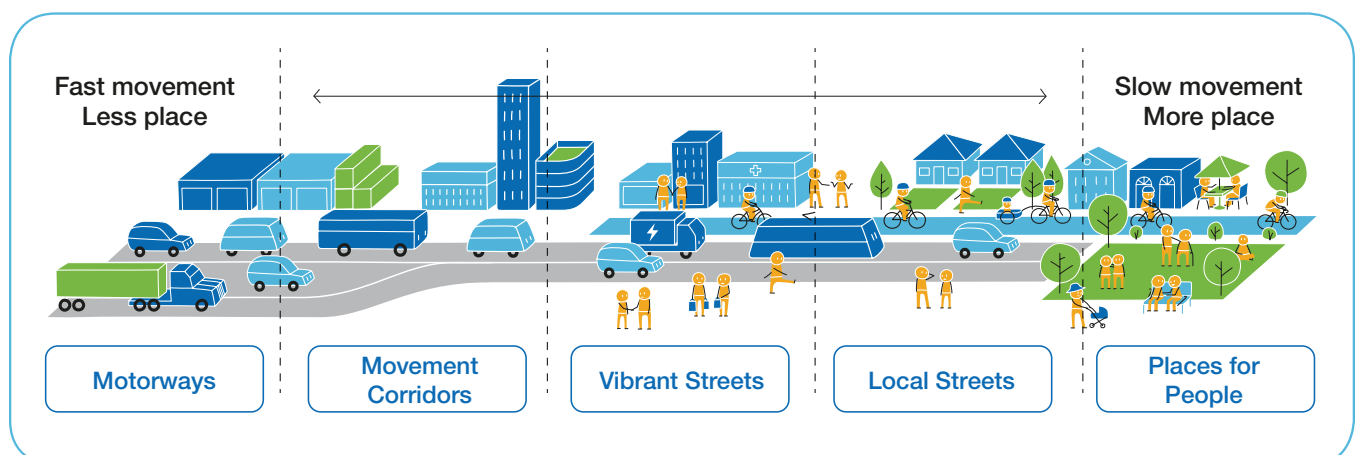
The *Productivity and Centres Strategy 2019* articulates the need for a Public Domain Strategy to enhance the amenity of strategic centres, ensuring they are great places to work and spend time connecting with others.



Great places are characterised by a mix of land uses and activities that provide opportunities for social connection in walkable, human scale, fine grain neighbourhoods.”

*Greater Sydney Region Plan 2018*

**Figure 16: Movement and Place Framework**



Source: *Future Transport 2056*



**Figure 17: The roads hierarchy**

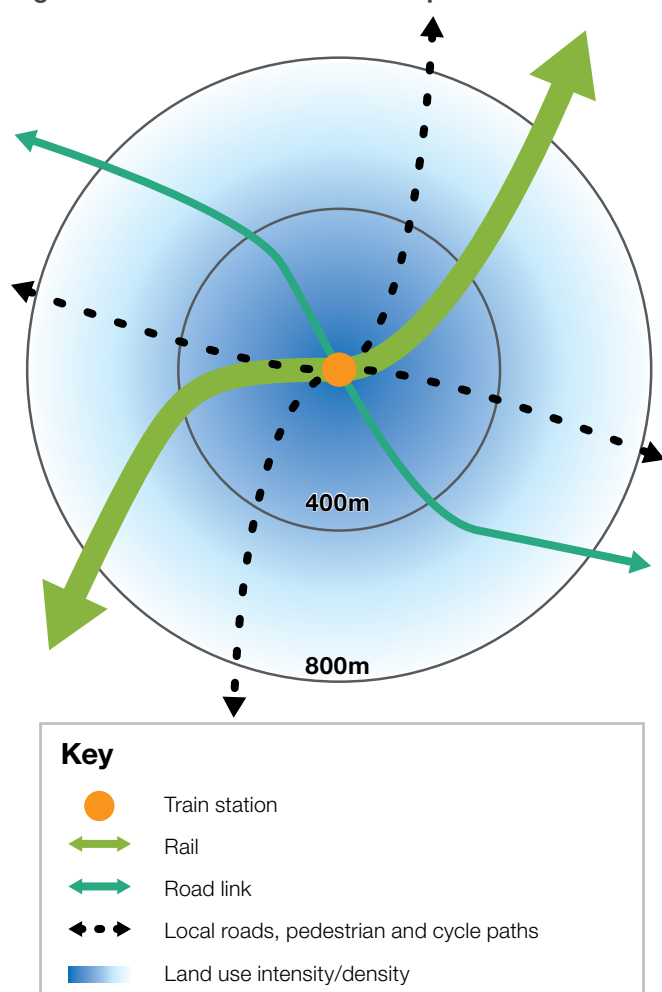


### Transit-oriented development

Transit-oriented development represents compact, walkable, mixed use developments centred around mass transport. Higher density residential, commercial and retail development are focused on the transport hub. Development then transitions to lower densities on the edge of an 800 metre radius. Roads, cycleways and walking trails are safe, easy to navigate and provide healthier connections. (Daniels and Mulley, 2013).

Transit-oriented developments are central to urban renewal. The *Hills Corridor Strategy* (2015) employs transit oriented development principles to renew established areas around station precincts. It responds to the vision articulated in the NSW Government's North West Rail Link Corridor Strategy (2013) and provides the local framework for housing and jobs growth to create liveable urban areas.

**Figure 18: Transit-oriented development**



Precinct planning for station precincts will focus on connectivity, locating higher density housing in areas that have the greatest potential for change, in easy walking distance to retail centres and stations.

### Urban renewal

A 30-minute city requires movement corridors to transport people and goods between centres. We need to plan for vibrant centres and local streets that become destinations for shopping, dining, meeting friends, working and connecting to transport. Freight and servicing activities should not detract from the amenity, safety and attractiveness of a centre, while ensuring deliveries and waste collection are timely and efficient.

Transport choices should be a key consideration of place-making and the intended function of the centre, community or place should influence transport planning. Public and active transport should be prioritised in centres and residential areas.

Precinct planning should consider the existing status of the transport network, its shortcomings and pinch-points and apply appropriate modelling to measure potential impacts, as well as forecast demand for transport, and how transport infrastructure and urban design may manage or reduce demand to balance movement and place functions. Consideration should also be given to the integration of smart technology that can improve management of parking demand and traffic flow.

While initial work has been undertaken for the station precincts, further detailed traffic studies are required to refine the information available and ensure precinct planning is based on accurate evidence.

Our *Public Domain Strategy* will provide an overall vision for the Shire's public areas and guide the preparation of individual public domain plans for master planned areas.

The *Public Domain Strategy* will provide guidance on place principles and public domain elements that should be uniform across the Shire and decisions regarding appropriate transport provision.



**Council will:**

- Use the zoning framework to identify the intention for housing growth close to centres, services and transport.
- Prioritise place-making in new and emerging neighbourhoods.
- Prepare land use planning documents and respond to development applications and planning proposals in strategic centres in line with the structure plans and phasing strategies contained in *Hills Future 2036*.

**Actions**

- Prepare and implement precinct plans and development controls for Norwest, Castle Hill and Rouse Hill strategic centres.
- Prepare and implement a Public Domain Strategy to enhance the image and amenity of strategic centres.
- Prepare and endorse a policy to guide the implementation and use of evolving technologies in the urban environment.



We need to plan for vibrant centres and local streets that become destinations for shopping, dining, meeting friends, working and connecting to transport.



**Public Domain Strategy**

Our Public Domain Strategy will direct works and improvements throughout the Shire. It will include:

- design principles applicable across the whole Shire
- key street design elements
- specific design principles for local, village and town centres, and business and industrial areas
- provision for precinct-specific public domain plans for:
  - Baulkham Hills town centre
  - Castle Hill strategic centre
  - Norwest strategic centre
  - Rouse Hill strategic centre.

The Public Domain Strategy will drive better place-making. Precinct-specific and Shire-wide plans will inform our Capital Works Program and provide direction and certainty to developers and planners preparing and assessing applications that have an impact on the public domain.

# Influence travel behaviour to promote sustainable choices

This relates to Planning Priority 12 in *Hills Future 2036*.

## Rationale

As population increases, so too will the numbers of cars that use the existing road network and demand for car parking.

Based on existing levels of car ownership, an additional 72,000 vehicles could be located in The Hills by 2030. *Future Transport 2056* does not identify any major new road connections to or through The Hills within the next 20 years, meaning additional vehicles will be added to the existing road network.

This increases the need to address congestion and encourage a shift to more sustainable transport modes.

The availability and location of car parking influences travel choices, from where and when people shop, or socialise, to how they travel to and from work. Most of the local workforce comes from outside the Shire and most by car. While car ownership and reliance remain high, parking will be required at the places people travel to and from.

We can influence travel behaviour through parking cost and availability that encourages alternative travel choices that are convenient and attractive while ensuring private vehicle travel is accommodated appropriately.

As noted in Figure 19, in places with easier access to mass, rapid public transport, the average number of cars per household is lower. Within The Hills, car ownership levels vary with location, with the lowest levels in Castle Hill where transport infrastructure integrates with high density development.

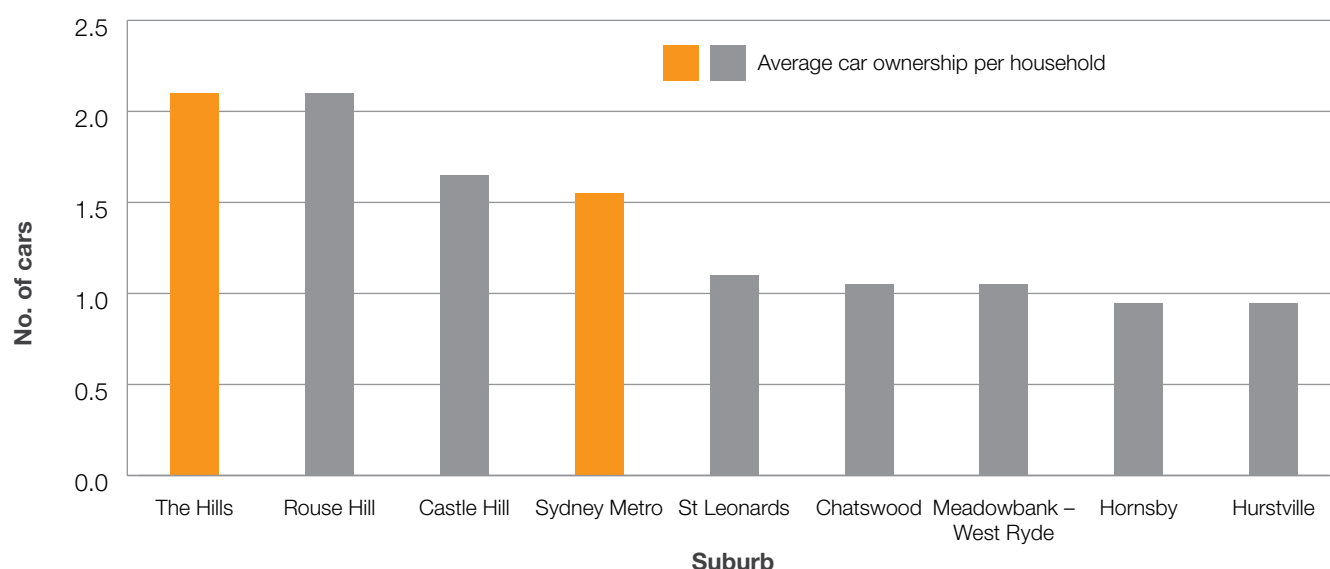
Reconsidering existing car parking rates for residential and commercial developments close to public transport, where car ownership levels are typically lower, and reducing parking opportunities at both origin and destination, will encourage greater use of public and active transport options.

Reducing required car parking rates may also reduce construction costs – for example, the average construction cost of a basement car parking space can be up to \$50,000. This in turn may increase development viability and put downward pressure on housing prices.

Further to this, in order to support residents and workers in their travel mode decisions, it is important for Council to take an active role in working with transport providers to achieve improvements to bus routes and service frequency as needed.



**Figure 19: Vehicle ownership per household**



Source ABS Census 2016

## Commuter car parking

Availability of commuter car parking is increasingly a concern in the community. Concerns range from insufficient car spaces, use of local streets, impacts on streetscape, loss of amenity and convenience.

Commuter car parking facilities include:

- Memorial Avenue T-Way car park (150 spaces and 20 spaces on access road)
- Torrs Street, Baulkham Hills (224 spaces and 100 on-street spaces)
- Cherrybrook – 400 spaces
- Showground – 600 spaces
- Bella Vista – 800 spaces
- Kellyville – 1,360 spaces
- Tallawong (in Blacktown LGA) – 1,000 spaces.

We endorsed the Sydney Metro parking management strategy, which manages demand through parking restrictions in areas within a 400-metre radius of Sydney Metro stations. Recommended restrictions vary from two to four-hour limits to no parking and no stopping zones. The strategy was developed and adapted in consultation with Council and affected landowners. Recommended restriction zones were adopted by Council.

Research suggests that train patrons are likely to walk up to and beyond 800 metres to access train services. Subject to monitoring of parking conditions around Sydney Metro Northwest stations, potential strategies to manage car parking demand up to and beyond the 800-metre radius include:

- marginal expansion of off-street commuter car parking capacity at strategic sites
- integration of digital technology to provide real-time parking information
- pop-up commuter car parks utilising infrastructure in locations outside the 800-metre catchment, with the support of a dedicated shuttle bus service
- expansion of a pilot program for on-demand local minibuses to provide an alternative to commuter car parking in areas not well served by bus services.

### Paid parking

Demand for on-street parking close to rail stations and centres is likely to increase. The availability of convenient, accessible, safe and well-located short-stay parking for visitors and customers is essential to individual businesses and local economies.

Short-stay parking and space for loading purposes should be prioritised in centres. One example is Carmen Drive shops in the nearby City of Parramatta LGA which is near a prominent bus stop on the M2. Timed parking restrictions allow consumers to support local businesses.

The availability and cost of long-stay parking influences decisions on how people will get to work. Improving active and public transport, and limiting long-stay parking and including paid short-stay parking in appropriate locations, will encourage a change in travel behaviour, enhance the effectiveness of public transport and support economic vitality.

Initial areas for investigation for short-stay parking include:

- Baulkham Hills
- Castle Hill
- Norwest Service sub-precinct
- Box Hill.

### Car sharing

Car sharing is a convenient, affordable and sustainable transport option that enables more sustainable travel habits and helps keep businesses and residents connected. It allows a single vehicle to be used by a large number of people, reducing congestion and competition for parking spaces.

Encouraging car sharing in high density residential and commercial areas close to transport hubs may be supported through targeted development controls. These could include:

- reduced car parking rates for developments incorporating shared parking facilities in station precincts
- requirements for dedicated car sharing spaces for new developments
- dedicated on-street parking for shared vehicles.

#### Council will:

- Seek to influence travel behaviour through careful and technologically efficient management of parking demand.
- Consider the integration of smart technology in the management of parking systems and demand.

#### Actions

- Review car parking rates for centres.
- Investigate and implement car parking controls for car sharing spaces in large scale commercial and residential development.
- Investigate metred short-term parking in key locations to manage parking demand and support businesses.



## Plan for convenient, connected and accessible public transport

This relates to Planning Priority 11 in *Hills Future 2036*.

### Rationale

While Sydney Metro Northwest will be accessed by many new and future residents, bus networks are critical to providing equitable access to public transport, while supporting Sydney Metro operations.

The Shire is traversed by seven strategic bus corridors that carry people to and from key employment areas. They must be supported by local routes throughout the Shire to decrease the need for commuter car parking.

Investment in additional services, bus priority measures and supporting infrastructure has seen a steady rise in bus patronage and a small but significant mode shift away from private vehicle use. Continued investment will increase bus patronage and support Sydney Metro Northwest.

We have identified public transport priorities that include city-serving and city-shaping infrastructure identified in *Future Transport 2056* as well as local and regional bus priority measures.



A mass transit link between Norwest and Parramatta will secure the long-term viability of Norwest.

### Norwest to Parramatta mass transit link

*Future Transport 2056* nominates a city-shaping link between Norwest and Parramatta as a 20-year visionary project with no firm commitment to planning at this stage.

By 2036, approximately 13,000 to 15,000 people will live in Norwest. Norwest is a strategic centre and has the highest jobs targets of any strategic centre in the Central City District outside of Greater Parramatta. Its success as an employment centre of district significance will rely on efficient connections.

A mass transit link between Norwest and Parramatta will secure the long-term viability of Norwest and support the growth of the Greater Parramatta and Olympic Peninsula (GPOP) economic corridor, cementing Parramatta's role as the Central River City CBD.

All major connections between The Hills and Parramatta are by road, and these are frequently congested at peak times. While the Sydney Metro Northwest may relieve some of this congestion in the short term, given that nearly 12 per cent of Hills residents work in Parramatta, and 10 per cent of the workforce comes from Parramatta and Cumberland LGAs, pressure on the existing road network will remain and increase as the population increases.

**Figure 20: City Shaping Corridor – Parramatta to Norwest**



Source: Transport for NSW – Future Transport 2056

The current timeframe does not reflect the importance of this corridor to the Central City District and employment growth in Norwest and Parramatta. It is essential to attracting a diversity of jobs to Norwest and will ease pressure on the road network, particularly high traffic levels between Parramatta and The Hills and Blacktown LGAs.

Baulkham Hills is the only local centre identified in *Future Transport 2056* for a mass transit link. Assuming the link is likely to be a Metro system, identification of a station box location in Baulkham Hills would reaffirm a commitment to the link. It also provides an opportunity to develop a bus interchange to support the route while planning and delivery of a mass transit link is underway. Possible locations for a future Sydney Metro station box include Crown land around the Baulkham Hills library or alternatively behind the Bull and Bush site. The library site is considered to be the optimal location with good access to Windsor Road and Old Northern Road and the ability to integrate with any future grade separation at Windsor Road and Seven Hills Road.

This should be supported by improvements to bus priority measures including extension of a bus lane north of Rembrandt Drive in Baulkham Hills to Norwest.

### North South Rail Link

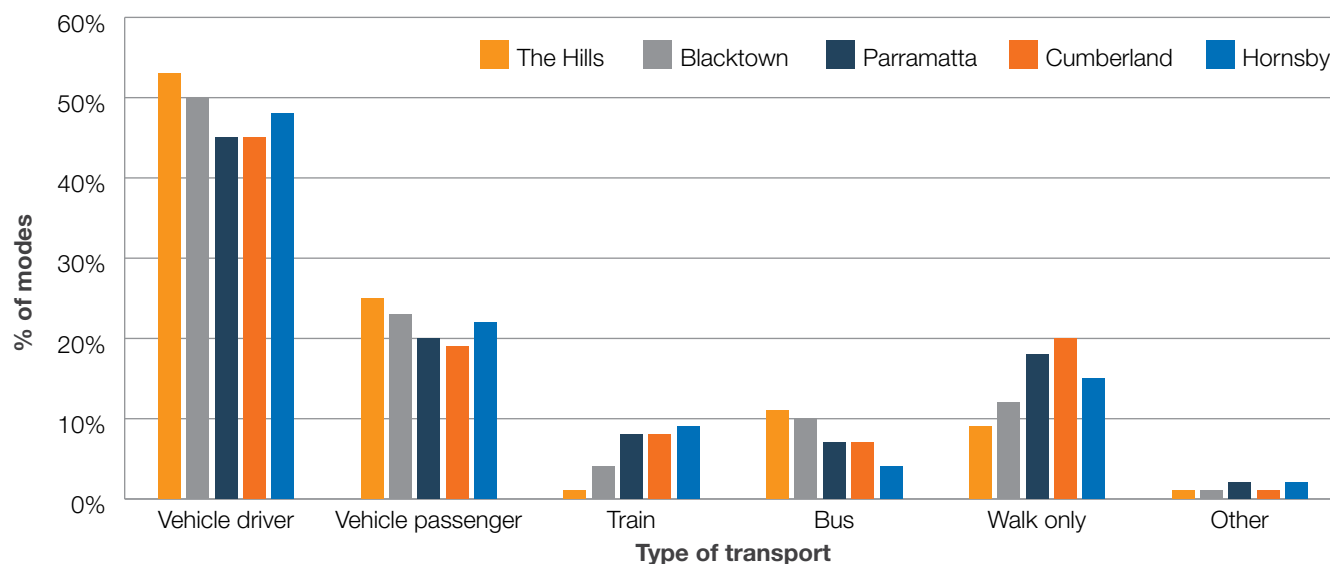
The extension of the North South Rail Link from Tallawong Station to St Marys will provide access for Hills residents to the Western Sydney International Airport and serve workers who travel to The Hills from Western Sydney. It would provide faster commutes to Parramatta via the T1 Western Rail Line and act as an interim solution while the mass transit link between Parramatta and Norwest via Baulkham Hills is planned and constructed.

### Local and regional bus priority measures

The Hills sees some of the highest levels of bus patronage in the Central City District comparative to its population. The proportion of bus patronage in The Hills is greater than the proportion of rail patronage as a percentage of total trips in adjoining LGAs.



**Figure 21: Mode split 2018**



Source: Transport for NSW Household Travel Survey

While the introduction of Sydney Metro Northwest is expected to shift the mode share in The Hills, bus services should continue to be supported with improved infrastructure to support commuters travelling to destinations not serviced by rail, including Parramatta and Western Sydney.

We have identified the following bus priority measures for arterial and local roads:

#### Arterial roads:

- Showground Road – from Old Northern Road to Carrington Road
- Norwest Boulevard – full length
- Green Road – from St Pauls Avenue to Showground Road
- Memorial Avenue – full length
- Old Northern Road – Castle Hill to Baulkham Hills
- Windsor Road – Norwest Boulevard to Rembrandt Drive.

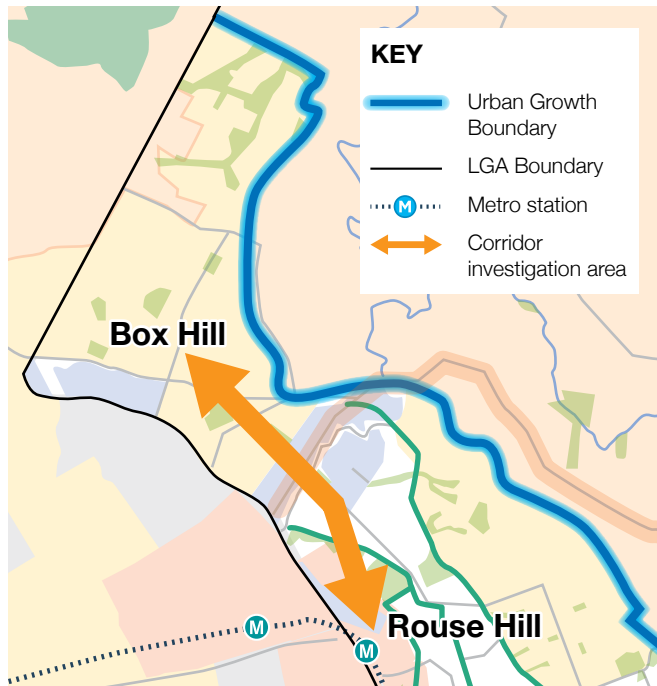
#### Local roads:

- West Pennant Hills – Highs Road, Taylor Street and Aiken Road (from Taylor Street to Oakes Road) with the bus lane extended to Castle Hill via a bus only bridge link over Excelsior Creek in the longer term
- North Kellyville – bridge from Ross Street to Edwards Road
- Station precincts.

### Box Hill to Rouse Hill public transport corridor

Growth in greenfield areas, particularly Box Hill and Box Hill North, will not be directly serviced by rail services. The greenfield areas are expected to accommodate close to 56,000 people and are already 35 per cent complete. To better connect people to both rail and T-way services, a link is required between Box Hill and Rouse Hill. We have preserved a public transport corridor in Rouse Hill along Withers Road, Mile End Road and Green Hills Drive. Investigations are required to identify the best continuation of the corridor and appropriate transport mode, whether that be light rail or bus, to maximise opportunities for residents in the North West Growth Area to access fast, reliable public transport.

**Figure 22: Box Hill to Rouse Hill corridor identification**



### Council will:

- Collaborate with Transport for NSW to identify and preserve a public transport corridor between Rouse Hill and Box Hill and determine the most appropriate transport mode.
- Monitor the effectiveness of the NSW Government's Sydney Metro parking management strategy and identify improvements or appropriate extensions to its area of operation.

### Actions

- Identify preliminary corridor and station box options and advocate for the earlier planning for a mass transit link between Norwest and Parramatta.
- Seek NSW Government commitment to the early planning and delivery of the North South Rail Link between Tallawong Station and St Marys.
- Plan for and advocate to Transport for NSW when appropriate for local bus priority measures as identified.
- Commence a pilot program of pop-up commuter car parking.



## Expand and improve the active transport network

This relates to Planning Priority 13 in *Hills Future 2036*.

### Rationale

Increasing the use of the active transport, especially for short trips, will benefit residents and reduce traffic congestion. Our *Recreation Strategy 2019* identifies improvements to the regional and local active transport network.

Walking is an important travel mode and is often associated with trips that also involve bus, rail or car. Walking and cycling influences the design of attractive, liveable areas with street activity, improved safety and a quality public environment.

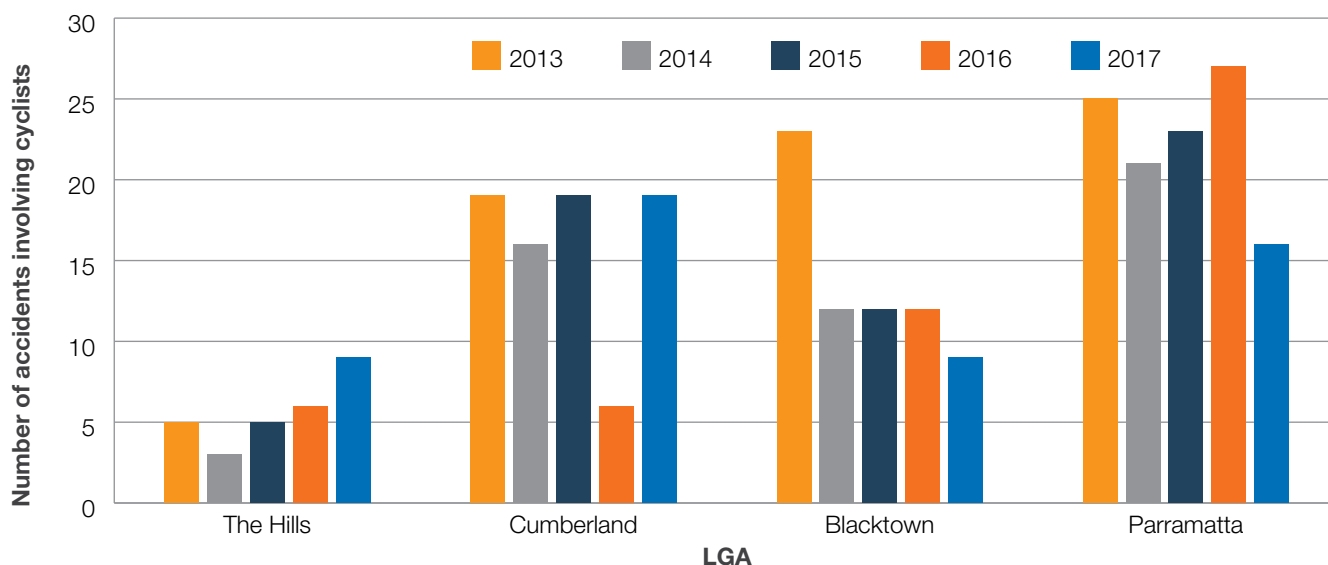
Traffic congestion generated by short trips under five kilometres could be reduced by shifting from car trips to walking or cycling. The Shire's network includes 523 kilometres of footpaths and 82 kilometres of cycleways. Our adopted Footpath Strategy identifies the proposed level of service for the provision of footpaths in the Shire.

Increasing cycling numbers has coincided with an increase in accidents involving cyclists in The Hills. Further improvements to the off-road cycling network may reverse this trend.

Our Bike Plan was last reviewed in 2009 and requires review in light of recent and expected growth. It shows regional, subregional and local links and identifies missing links that could increase patronage and safety. The Bike Plan seeks to identify more direct routes that work with the local topography.

The Sydney Metro Northwest pedestrian and cycle strategy identifies options for improvements to on and off-road cycle and pedestrian networks. Some will be provided by Sydney Metro Northwest with others provided by different bodies, including Council. The review of the Bike Plan will consider the options and how they can be delivered. Public domain plans for station precincts will consider any new on and off-road cycle and pedestrian links and these will be incorporated into our Bike Plan review.

**Figure 23: Accidents involving cyclists**



Source: Transport for NSW crash and casualty statistics

## 4. PLANNING PRIORITIES

Figure 24: Excerpt from the Sydney Metro Pedestrian and Cycle Strategy



Source: Sydney Metro Pedestrian and Cycle Strategy

Work has commenced on identifying trip generators outside station precincts, overlaid with existing and proposed cycleway improvements. This work will continue as part of the Bike Plan review to identify gaps and opportunities to improve connectivity.

Insufficient wayfinding may influence mode choice. To maximise patronage, active transport networks need to be direct and legible and it should be easier to identify access points to active transport networks. The Bike Plan review will address wayfinding.

### Council will:

- Progressively identify and fill the gaps in the network of off-road cycleways and footpaths.
- Support the health and wellbeing of residents by prioritising active transport links in centres and residential areas.

### Actions

- Review and update the Bike Plan.
- Improve wayfinding on existing and proposed cycleways.



## Plan for a safe and efficient regional road network

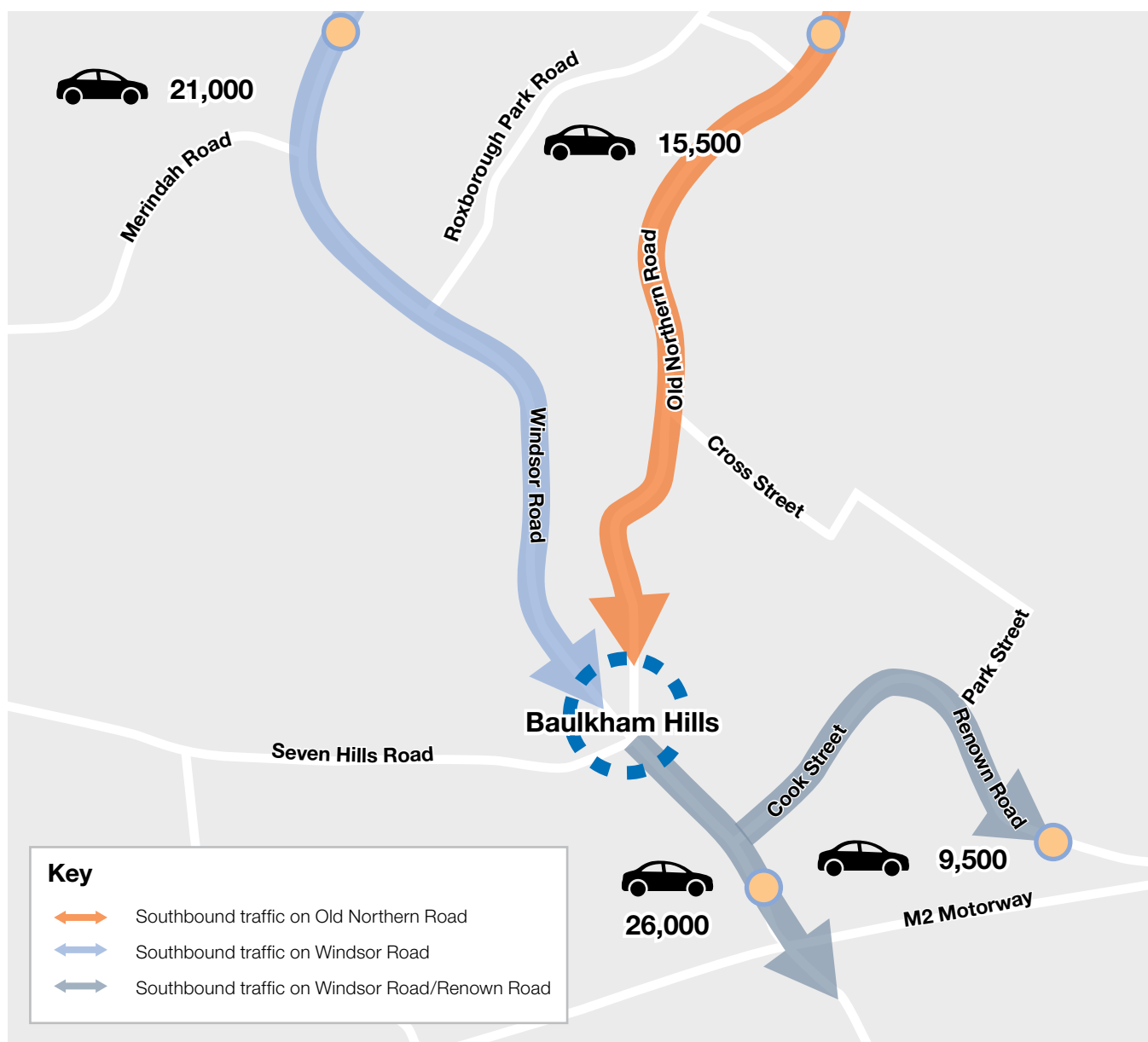
This relates to Planning Priority 14 in *Hills Future 2036*.

### Rationale

Traffic congestion is a source of frustration for Hills residents and contributes to a negative view of growth and change. While improvements to public transport will alleviate some congestion in the short term and localised

improvements will support efficiencies in the regional network, the level of service on arterial and regional roads is critical to a growing population and an effective freight network.

**Figure 25: Southbound traffic counts – Windsor Road, Old Northern Road and Renown Road, 2018**



Source: RMS

### Traffic congestion

Reducing traffic congestion requires holistic consideration of the entire transport network, not just road capacity. Infrastructure and policy associated with adjustments to parking supply, public transport, walking and cycling and land use can all contribute to, and can potentially make better use of, available road capacity.

Traffic counts within The Hills and adjoining LGAs speak to the large volumes of traffic movements to and through the area each day. Southbound and eastbound movements are important for residents of the Shire and adjoining LGAs who work in Parramatta, Hornsby, Ryde and Sydney CBD.

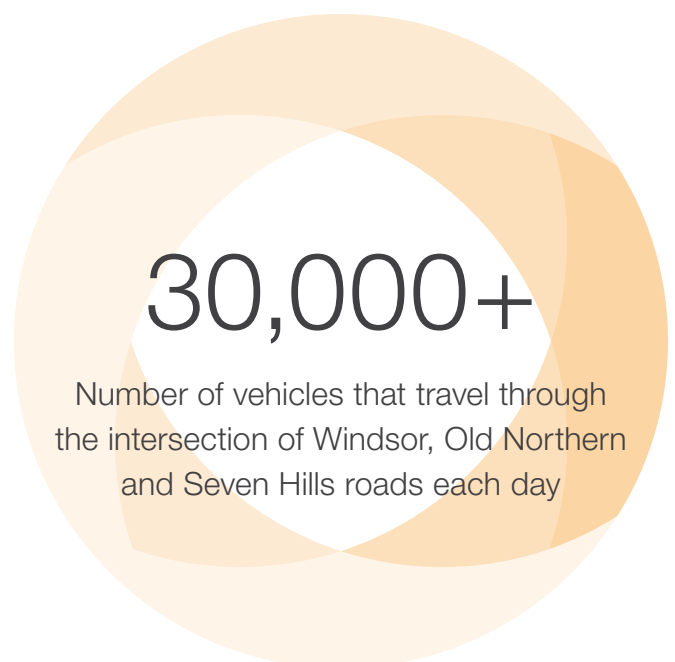
Southbound traffic travelling through Baulkham Hills to Parramatta is a concern. More than 30,000 vehicles travel through the intersection of Windsor Road, Old Northern Road and Seven Hills Road each day, with a portion then entering the M2 southbound; however, most are likely to continue on to Parramatta. Despite variable lane directions (tidal flow) on Windsor Road and improved bus services, this route remains subject to significant congestion.

East-west movements represent trips in and out of Blacktown and Hornsby LGAs and serve as an alternative route for people travelling northbound towards the M1 and southbound along Pennant Hills Road to the North Shore and Sydney CBD. Annangrove Road facilitates east-west movements, capturing residents from The Hills and Blacktown LGAs, particularly from the developing North West Growth Area precincts. We commissioned a traffic and transport assessment of the length of Annangrove Road in 2018 to identify and evaluate different strategic options taking into account extra traffic from the growth of the adjacent areas.

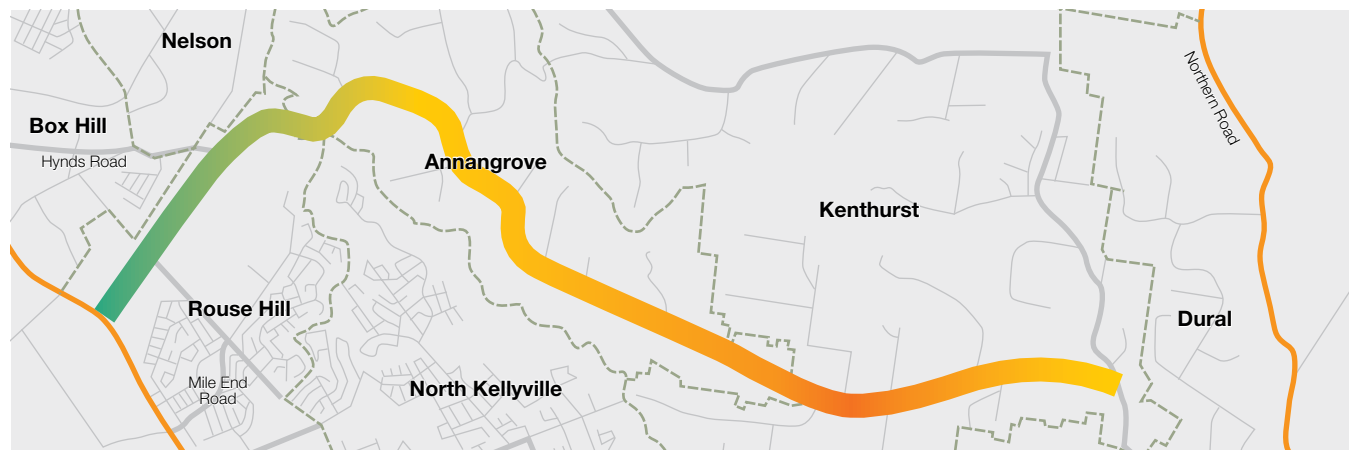
While most sections of Annangrove Road operate at a satisfactory level of service (levels A-C), some including between Bannerman Road, Sedger Road and Angus Road are nearing capacity (level D) with up to 970 vehicles passing through during the morning and afternoon peak hour, equivalent to volumes expected on regional, rather than local roads.

With Box Hill and Box Hill North currently only a third developed, initial analysis suggests the current configuration of Annangrove Road is unlikely to be able to support projected traffic demand to 2036, with the easternmost sections estimated to reach an F level of service where delays are extreme and unsatisfactory. Suggested improvements to accommodate growth include:

- widening to form a dual lane divided carriageway separated by a central median
- traffic signals at intersections with Withers Road and The Water Lane
- roundabouts at strategic locations including intersections with Edwards Road and Bannerman Road.



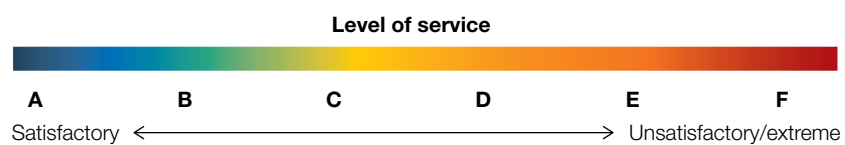
**Figure 26: Eastbound traffic movements – Annangrove Road**



Existing eastbound level of service 2018



Estimated eastbound level of service in 2036,  
assuming no changes to existing road configuration



Source: TSA 2018

### Freight

Efficient freight links facilitate smooth and effective movement of goods, allowing supply chains to function smoothly and influence new markets. Currently, businesses in The Hills are somewhat limited in the freight routes they can access; in the absence of heavy rail, freight must move on the road network.

Freight movements originating in the Shire's urban area (shown in red in Figure 27) travel north to the Central Coast, east to Sydney CBD and south and west towards Port Botany and heavy rail at Blacktown. Freight movements originating in the north of the Shire around extractive industry sites at Maroota (shown in light orange) predominantly travel to markets to the south. Most of these materials are sold locally within Sydney.

Planning for freight and servicing of residential and commercial development is crucial to how the Shire works and connects to adjoining areas, Greater Sydney and beyond. Planning for freight is a shared responsibility between the NSW Government and councils. Transport for NSW identifies and protects key freight corridors and builds transport infrastructure.

Figure 28 shows the existing freight corridors and networks that traverse the Shire: the M2/M7 Motorway, Old Northern Road, Windsor Road, Pennant Hills Road and Norwest Boulevard.

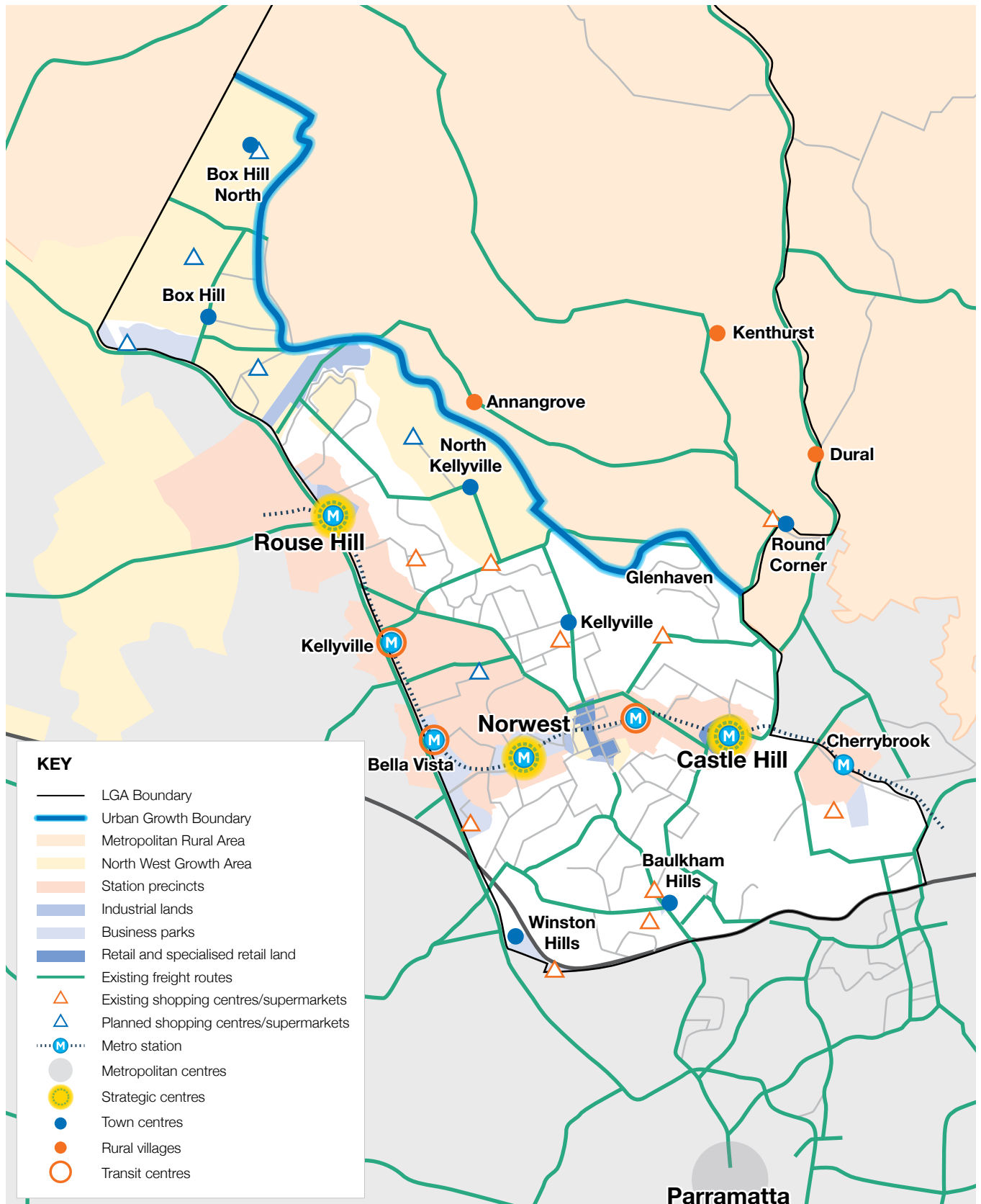
Figure 27: Freight movements



Source: Transport for NSW – Strategic Freight Model

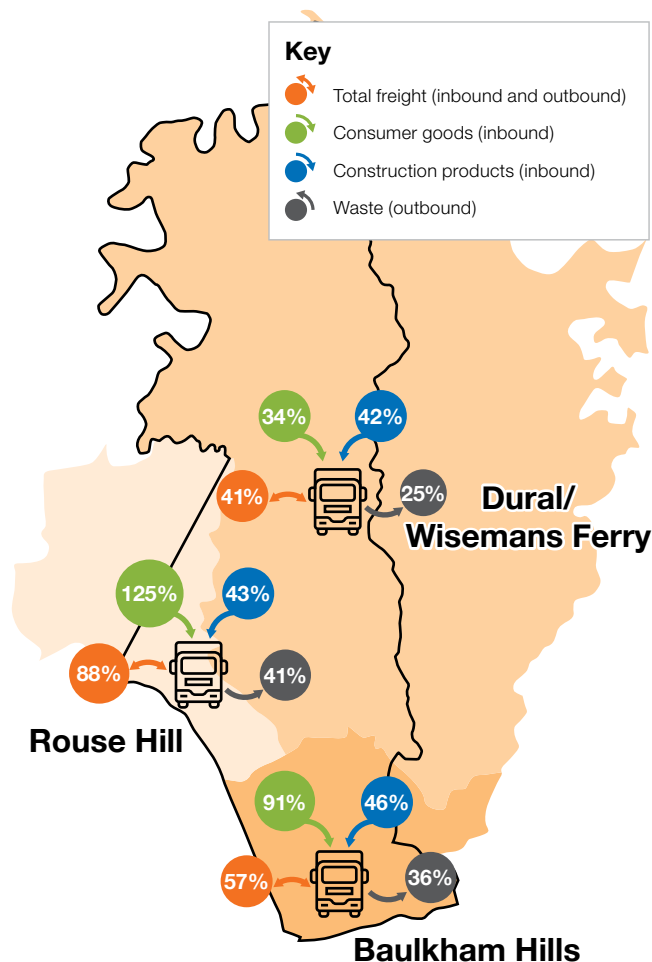


Figure 28: Freight and logistics precincts and key freight corridors through the Shire



Freight demand in Greater Sydney is being transformed by population and economic growth, and changing consumption patterns. Figure 29 shows the expected changes in freight demand for the Hills Shire to 2036.

**Figure 29: Changes in freight demand in The Hills Shire to 2036**



Source: Transport Performance and Analytics TfNSW

There will continue to be strong demand for construction materials for new infrastructure, and residential and commercial development. Increasing consumer deliveries through e-commerce means there is a need for key transport connections to be preserved and improved. Waste volumes will increase significantly as the Shire's population grows. As existing landfill capacity is depleted, waste will increasingly need to be transported further afield.

We have identified key strategic improvements to the regional road network that would improve how people and goods are moved.

### Outer Sydney Orbital

Consultation on the proposed corridor preservation for the Outer Sydney Orbital in 2018 resulted in the extent of the identified corridor being reduced to end at Richmond Road. *Future Transport 2056* identifies the extension of the road as a 20-year visionary project.

Identifying this corridor early will underpin planning for growth in The Hills and surrounding LGAs. The developing business park and industrial estate at Box Hill will rely on the orbital to connect to the Western Sydney International Airport and the Central Coast, the Shire's primary freight destination. Identifying a corridor and committing to construction of the orbital will ensure the success of the fledgling business park and industrial areas, while protecting the long-term viability of freight routes servicing existing industries and extractive industries in the north of the Shire, as well as the wider area.

### Annangrove Road arterial and Round Corner bypass

The Annangrove Road bypass has previously been identified as a priority but is not identified in the *Greater Sydney Region Plan* or *Central City District Plan*. Annangrove Road currently connects Windsor Road and Pennant Hills Road via New Line and Boundary roads at Dural. As noted earlier, the development the North West Growth Area will see unacceptable levels of service on Annangrove Road.

Amending the status of Annangrove Road to arterial will help to secure funding for upgrades. In conjunction with this, a bypass of Kenthurst Road to connect directly



with Old Northern Road then New Line Road could ease congestion around Dural and Round Corner.

## Grade separation at Windsor Road and Seven Hills Road

Residents who live in and around Baulkham Hills face traffic congestion and delays each day. We have prepared concept plans for either a partial or full grade separation of Windsor and Seven Hills roads and have long advocated for grade separation to improve the intersection capacity and the through traffic speed.

This approach has not been supported by the NSW Government to date. As these are regional roads and most of the traffic is through traffic, we will continue to advocate to NSW Government for grade separation. With the mass transit link between Greater Parramatta and Norwest via Baulkham Hills many years away, in the short term, grade separation at this intersection must be considered in the context of how it could potentially work with the mass transit link.

## Freight logistics

The local road network must have capacity to accommodate delivery vehicles, removalists and waste collection vehicles in addition to increased local traffic. This task presents challenges where existing streets are narrow and on-street parking inhibits manoeuvring room for larger vehicles. For Showground Station Precinct, the development control plan provides for widening of some local streets to facilitate parking on one side and improve the function of the road network.

One of Council's largest freight tasks is in the transfer of waste for disposal at distant facilities. Waste management needs to be approached from both a reduction and logistics standpoint. The *Environment Strategy 2019* details our approach to reducing the waste burden through improved separation and potential for on-site organics processing in high density areas, and potential planning controls to facilitate more efficient waste collection.

The changing nature of retail trade and increased reliance on online shopping and delivery is changing the nature of urban freight logistics. The introduction of local distribution premises as a land use term in the local

environmental plan seeks to permit smaller distribution centres, close to populated areas, using vehicles more appropriate within an urban environment. Presently, local distribution centres are permissible with consent in the following zones:

- B5 Business Development
- B6 Enterprise Corridor
- B7 Business Park
- IN1 General Industrial
- IN2 Light Industrial.

Based on the above zones, it is technically possible to locate local distribution premises within five kilometres of most populated urban areas of the Shire. We will monitor uptake to better understand demand and any barriers. If existing zoned land is insufficient or unviable, we may investigate alternative locations suitable for local distribution premises and determine whether the use should be extended to other zones.

### Council will:

- Advocate for regional road projects that will benefit the Shire as well as Greater Sydney.
- Monitor traffic levels on key regional roads to pinpoint timing for necessary upgrades.
- Monitor uptake of local distribution centres and consider if the use is appropriate in additional zones to improve the efficiency of the freight network.
- Consider opportunities to improve local road networks to better accommodate delivery vehicles, removalists and waste collection as part of precinct planning.
- Review development controls for commercial and higher density residential development to ensure efficiencies of deliveries and servicing.

### Actions

- Work with the NSW Government to revise the status of Annangrove Road to an arterial road.
- Plan for and seek NSW Government support for grade separation at the intersection of Old Northern Road/Seven Hills Road and Windsor Road, Baulkham Hills.



# IMPLEMENTATION, MONITORING AND REVIEW

## Implementation and delivery

The actions in this Strategy will be implemented in accordance with the Implementation Plan supporting *Hills Future 2036*.

## Stakeholders

Stakeholders who will help us to deliver the actions include:

- residents
- surrounding councils
- State agencies including the Greater Sydney Commission, Department of Planning, Industry and Environment
- the development industry.

## Planning instrument

The *Integrated Transport and Land Use Strategy 2019* suggests potential changes to planning controls following further investigations and precinct planning work. We expect to complete these precinct plans and subsequent planning proposals by the next five-year review.

Proposed amendments that do not warrant detailed planning or further investigations will be included in the review of The Hills Local Environmental Plan.

## Monitoring and review

The *Integrated Transport and Land Use Strategy 2019* will be monitored annually and reported to Council to inform future review programs. We expect to review, exhibit and re-adopt the Strategy every five years to ensure transport networks and services meet the needs and lifestyles of The Hills community.

Image courtesy of Transport for NSW

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TSA (commissioned by The Hills Shire Council) 2018 Traffic and Parking Impact Statement – Strategic Analysis of Annangrove Road between Windsor Road and Kenthurst Road





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