

# **GREATER MACARTHUR 2040**

An interim plan for the  
Greater Macarthur Growth Area

**NSW Department of Planning and Environment**

**November 2018**



# ACKNOWLEDGEMENT

**NSW Department of Planning and Environment  
acknowledges the Traditional Custodians of the land,  
the Tharawal and Dharug people, and pays respect  
to all Elders past, present and future.**

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# EXECUTIVE SUMMARY

**The Greater Macarthur Growth Area pivots on Campbelltown-Macarthur. Balancing growth north and south of this metropolitan centre will boost the economy, bring investment in local jobs and provide high quality education, recreation and housing opportunities. At the heart of Greater Macarthur, a koala reserve will secure habitat and movement corridors with complementary actions to make the region a koala friendly community.**

*Greater Macarthur 2040* is a land use and infrastructure implementation plan to set a vision for the Growth Area as it develops and changes. It will enhance the region's liveability, productivity and sustainability.

The plan sets a long term vision and will be reviewed as information becomes available. It provides a framework for the future of the two elements of the Greater Macarthur Growth Area: in the north, the urban renewal of the rail corridor from Glenfield to Macarthur, and in the south, the development of land release areas from Menangle Park to Appin.

This plan is supported by a strategy for major items of State and local infrastructure, including public transport, roads, schools, green infrastructure and open space and medical and community facilities.

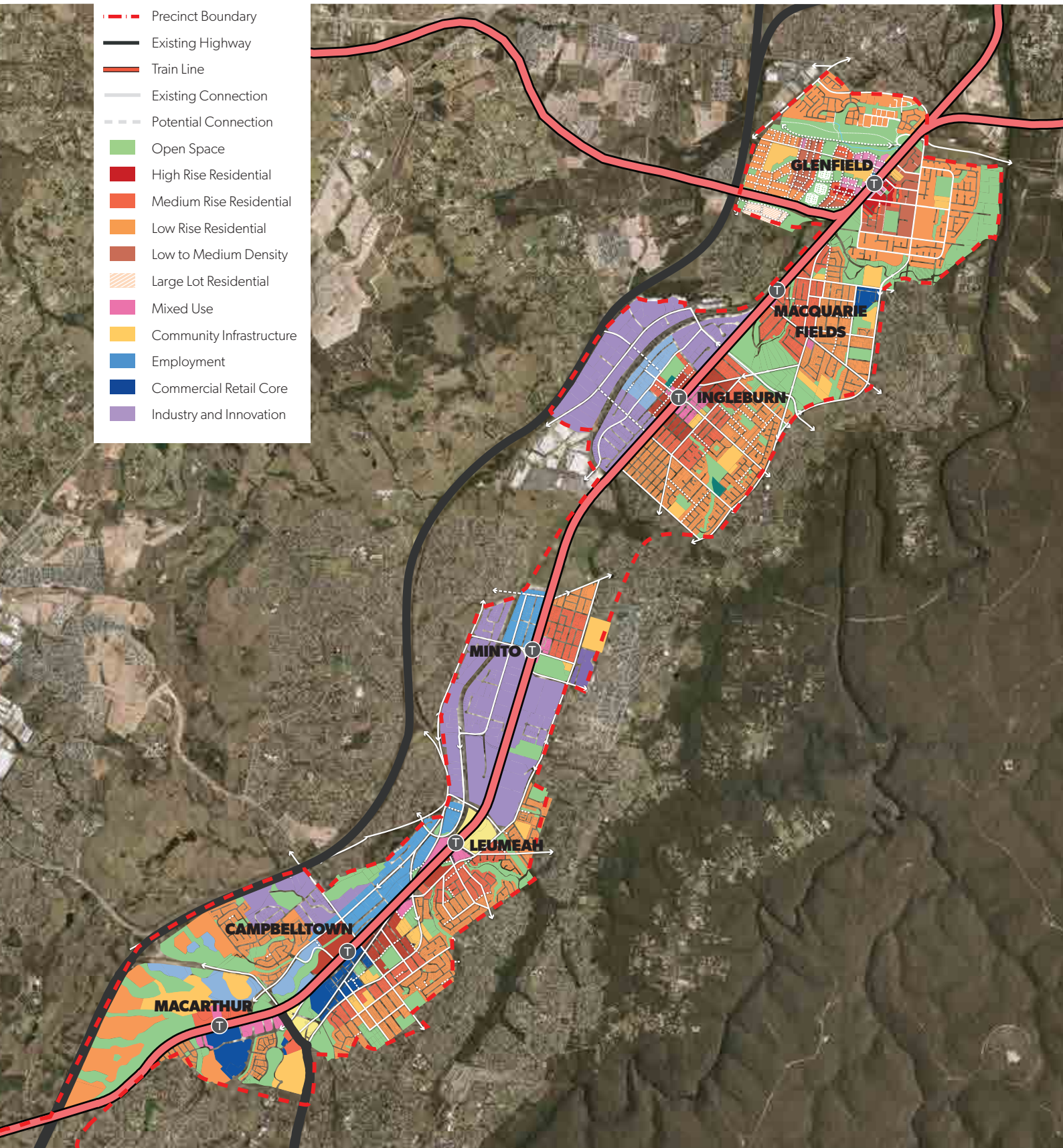
The Greater Macarthur Growth Area structure plans (Figures 1 and 2) outline how the north and south of the Growth Area will develop. These plans are shaped around:

- **establishing a koala reserve** by using public land for a koala park and securing green corridors for other species
- **designing new infrastructure to protect koalas** by using koala proof fences to prevent the risk of road kill
- **transport-oriented development** in both urban renewal and land release precincts
- **homes in a variety of forms** to meet the needs of people of different ages and incomes
- **a highly accessible transport corridor** connecting Campbelltown-Macarthur, Gilead, Appin and Douglas Park
- **three new east-west connections** to the Hume Motorway to support delivery of the Growth Area in sectors
- **public open space and amenities** for new communities
- **walkable** neighbourhoods for all age groups
- **cycle paths** connecting neighbourhoods with public transport, jobs, education and open space
- **economic development** opportunities through an economically strong Campbelltown-Macarthur with new centres at Glenfield, Menangle Park, Gilead and Appin.

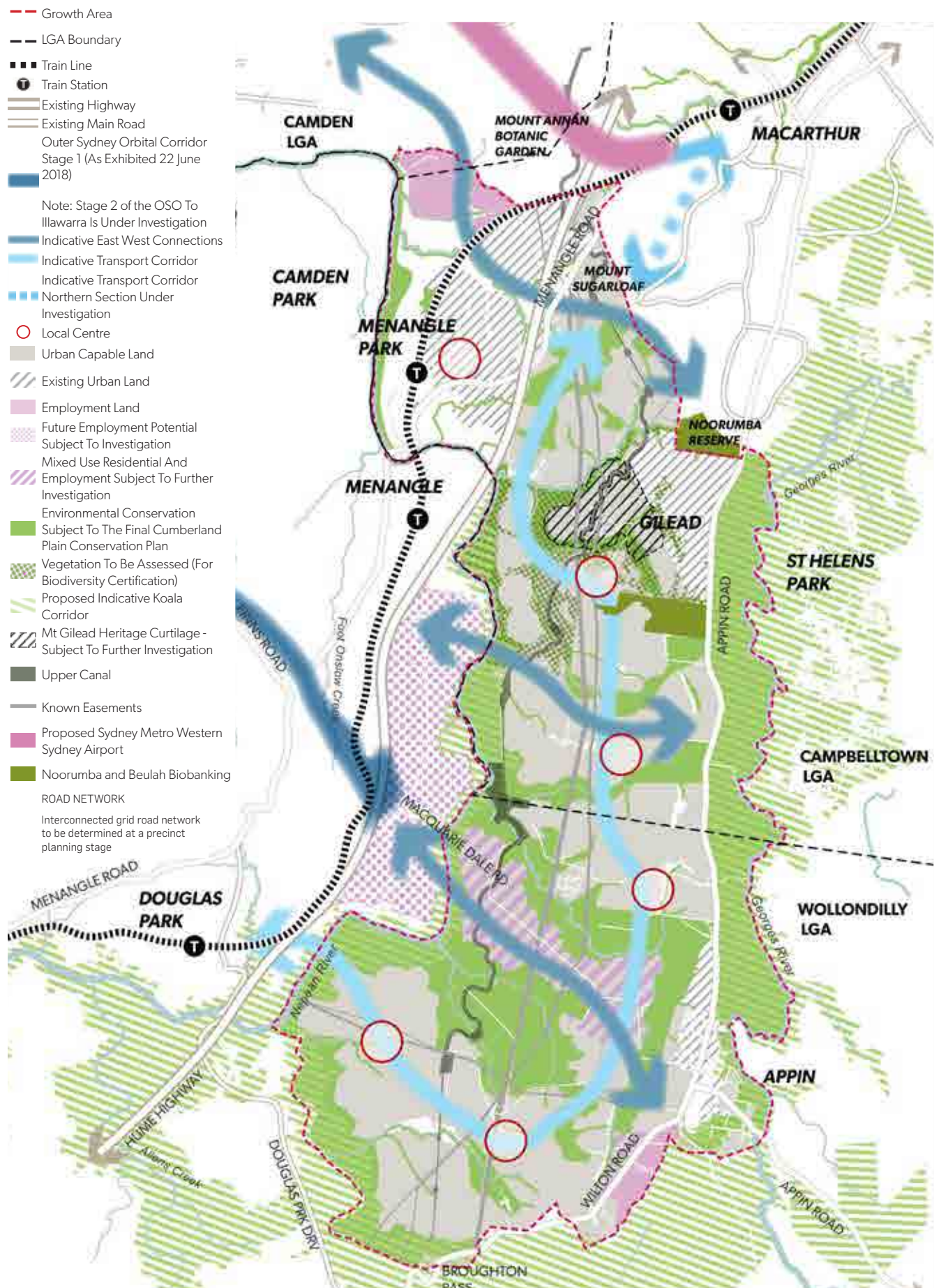
Planning for new facilities and infrastructure includes:

- **grant programs to raise koala awareness** where local community groups and councils can seek funding for new research, habitat improvement and pest management
- **the Greater Macarthur and Glenfield to Macarthur Special Infrastructure Contribution (SIC)** schemes to provide funding for NSW Government infrastructure required to support growth
- **precincts brought forward** serviced at no additional cost to government
- **phasing** infrastructure delivery and funding or the private construction of key elements to align with growth
- **local contributions** plans prepared by Campbelltown, Camden and Wollondilly councils
- **integrated water and wastewater** planning
- **prioritised State agency investment** as land is released and rezoned.

**Figure 1:** Greater Macarthur Structure Plan (urban renewal areas)



**Figure 2: Greater Macarthur Structure Plan (land release areas)**



## Key actions

*Greater Macarthur 2040* sets out key actions that will help to meet the vision for Greater Macarthur Growth Area.

- **Precincts will be rezoned**, with Glenfield, Ingleburn and Gilead North the first priorities, as agreed with Campbelltown City Council, Camden Council and Wollondilly Shire Council.
- **Special Infrastructure Contribution schemes** will be finalised.
- **The Cumberland Plain Conservation Plan** will conserve the Growth Area's environment and biodiversity.
- **Collaboration** with the community, councils and the Office of Environment and Heritage, to ensure koala protection is part of the character and community values of the area.
- **Collaboration** with Transport for NSW and Roads and Maritime Services will develop business cases for public transport and road improvements.
- **An economic development strategy** will be developed for the Growth Area.
- **Landowners will have the opportunity** to bring forward the release and rezoning of land so long as there is no financial impost on government.

## Implementation approach

Housing need and take up will need to be carefully monitored. Precinct rezoning will avoid fragmentation to allow the efficient delivery of infrastructure. The Department of Planning and Environment will continue to collaborate with Campbelltown City Council, Camden Council and Wollondilly Shire Council to manage infrastructure and the creation of places, streets, open space, and public areas through a streamlined planning process.

Greater Macarthur is a logical extension of the urban form of the south west. It will balance growth south of Campbelltown-Macarthur. The Department of Planning and Environment has approached planning for this area as a large extended master plan framework.

The extended master plan area will be a significant new part of metropolitan Sydney, and in addition to residential uses will provide and develop into an important employment corridor utilising city shaping corridors – major trunk road and public transport corridors providing higher speed and volume connections between our cities and centres that shape locational decisions of residents and businesses.

## Principles for of Greater Macarthur

Collaborative workshops were held with major landowners, developers and councils identified the following principles of development for the Greater Macarthur land release areas in the south of the Growth Area:

1. Infrastructure for the Growth Area is not in the NSW Government's infrastructure program so early development including delivery of enabling infrastructure will need to occur at no additional cost to Government.
2. *Greater Macarthur 2040* will provide certainty for landowners by setting out the NSW Government's objectives and framework for sustainable development over 30 years.
3. The urban structure and density of development will be underpinned by investment in public transport.
4. Implementation will occur through a collaborative approach to deliver innovative solutions and a cohesive outcome.
5. The Department of Planning and Environment will consider a wide range of implementation approaches, provided they are consistent with the Growth Area plan and these principles. Landowners will be able to use different options and solutions for land delivery and sequencing of development.
6. Activation of precincts will be led by private sector investment in road and social infrastructure.
7. Conservation of biodiversity and koala colonies will be at the heart of the Growth Area.
8. High quality urban design of the public and private realm will complement areas of conservation to provide high amenity.
9. Employment opportunities will be provided in Campbelltown-Macarthur and locally in each precinct to achieve a 30-minute city for residents.

# VISION

**In 2040, the Greater Macarthur Growth Area will be a highly connected and accessible urban region. It will support and be serviced by a thriving and diverse Campbelltown-Macarthur. People living here will be close to green corridors that contain parks, green cover and open space. Being active will be a way of life. The natural environment will flourish with koalas and other species in safe and growing populations through biodiversity protection and enhancement. High quality jobs, services and education will be available close to home.**



## PLACE

**A connected urban community** People can come together in public places in streets, plazas, parks and recreation spaces providing opportunities for community events, markets and festivals.

**Families** A place where people live near families and friends in places they can afford.

**A thriving place** Greater Macarthur will provide a full range of housing, services and jobs within a healthy environment.



## LANDSCAPE

**Land uniquely bounded by water** The riparian corridors of the Georges River to the east and Nepean River to the west and several creeks will be protected.

**A place that recognises and protects koalas and biodiversity as part of the character and values of the community** Development will be separated from important wildlife and koala as corridors, with these corridors protected in perpetuity and restored and enhanced. Awareness raising and research will ensure koala friendly action is a fundamental value of the community.

**A protected and enhanced environment** Healthy waterways and connected bushland will separate new towns.

**Heritage conserved for future generations** Planning controls will protect areas of European and Aboriginal heritage significance.



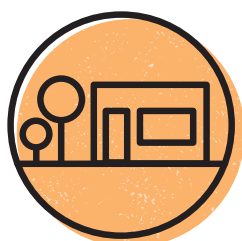


## BUILT FORM

**Engaging, well designed places** Better design, guided by green and sustainable planning controls and complemented by innovative approaches by the private sector, will create places where people want to live and work.

**City-scale homes and offices near transit nodes** A variety of building forms will include multi-storey development near train stations and centres and along transport corridors.

**Sensitivity to koalas, biodiversity and heritage** Development will relate to and be respectful of natural and built areas of significance and beauty.



## LAND USE

**Campbelltown-Macarthur will thrive as part of the burgeoning metropolitan cluster** With further investment in tertiary education and health and connection to the Western Sydney Airport via a new rail line, the centre will grow to provide an economic and social hub for the Growth Area and region.

**A choice of housing** Homes will range from multi-storey apartments to individual homes with a diverse mix to appeal to people of all life stages and backgrounds.

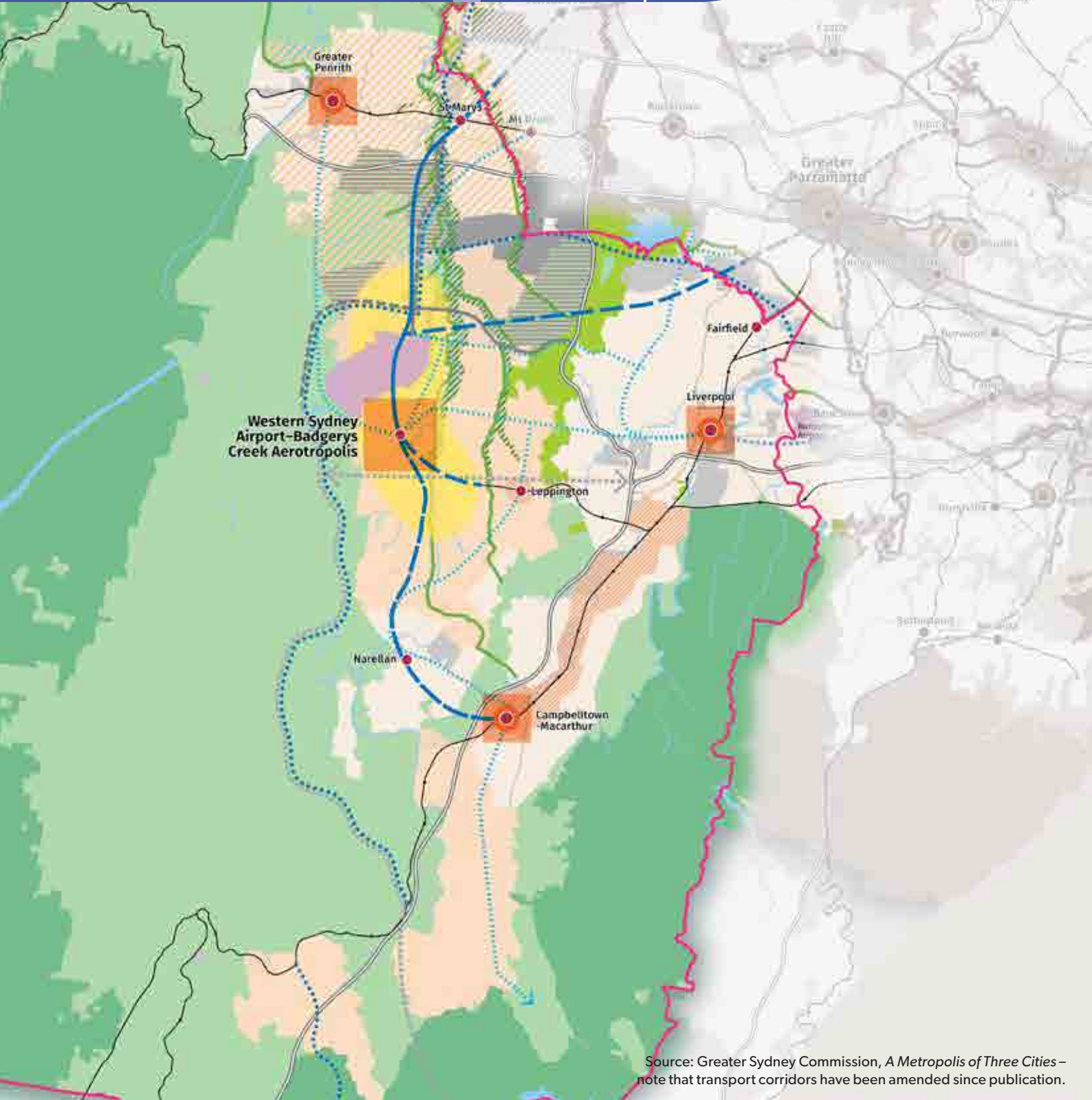


## MOVEMENT

**Transport will form the spine of the Growth Area** Development centred on the existing rail line and a new transport corridor, complemented by new east-west and internal road connections, will connect neighbourhoods to Western Sydney, the Illawarra and the Sydney CBD.

**Compact walkable neighbourhoods** Towns within the Growth Area will be attractive places where it is easy to walk and cycle to schools, open space and services.

# CONTEXT



Source: Greater Sydney Commission, *A Metropolis of Three Cities* – note that transport corridors have been amended since publication.

**Figure 3:** Regional context

## The Greater Sydney Region Plan

**The Greater Sydney Region Plan, *A Metropolis of Three Cities* and *Western City District Plan (March 2018)* both identify Campbelltown-Macarthur as a Metropolitan Cluster that will provide substantial housing and employment growth for the Western City District.**

### The opportunity

The 40-year vision for the Greater Sydney Region, set out in *A Metropolis of Three Cities*, seeks to meet the needs of a growing and changing population by transforming Greater Sydney into a metropolis of three cities – the Western Parkland City, the Central River City and the Eastern Harbour City.

This Land Use and Infrastructure Implementation Plan for Greater Macarthur is essential to the vision for a thriving Western Parkland City focused on the planned Western Sydney Airport. It implements the regional vision of the *Western City District Plan*, complementing and supporting its delivery.

This plan and future precinct plans are required to be consistent with *A Metropolis of Three Cities* and the *Western City District Plan* just as local plans prepared by councils are required to be consistent with these documents.

Campbelltown-Macarthur has the potential to be a Metropolitan Centre, providing jobs, services and cultural opportunities for South West Sydney. *Greater Macarthur 2040* builds on Campbelltown City Council's vision for the centre, to deliver the 30-minute city, where people live within 30-minutes of their job. This is a key objective of *A Metropolis of Three Cities* and the *Western City District Plan* and it is necessary to harness the development potential of the Greater Macarthur.

Refocusing existing suburbs to the north, along the railway line, away from commuter hubs to centres in their own right, requires a new approach to place making and urban renewal. Similarly, enabling the development potential of the southern land release area between Menangle Park and Appin requires a landscape-based approach to the protection of environmental and landscape values to shape the character of new communities.

The relocation of the agricultural component of Hurlstone Agricultural High School and land surplus to transport has created an opportunity for a new sporting and education precinct at Glenfield.

### Making it happen through collaboration

Collaboration and coordination across all three levels of government will be required to deliver Greater Macarthur.

### Western City Deal

Released on 4 March 2018, the Western City Deal is a 20-year agreement between the Commonwealth, State and eight Western Sydney councils to invest in significant infrastructure, lifestyle and amenity assets, and to improve employment opportunities. The City Deal leverages additional jobs, housing and liveability improvements from the Australian Government's investment in the Western Sydney Airport. It will drive a new economy in the emerging Aerotropolis and the area immediately around the Airport.

The City Deal focuses on:

- delivering a new North South Rail Line which is now called 'Sydney Metro Western Sydney Airport Line' to the existing rail networking including connections to the Aerotropolis and Campbelltown-Macarthur
- supercharging the Aerotropolis and delivering industry precincts to create 200,000 new jobs across Western Sydney
- skilling residents in Western Sydney for this new opportunity
- more efficient planning outcomes through better coordination
- an enduring governance arrangement involving all levels of government and private sector to deliver the Western Parkland City.
- a \$150 million Liveability Program to enhance local amenity
- improve housing supply through density done well, and streamlining approvals across all three levels of government
- support clean air, green spaces, vibrant arts and cultural initiatives
- introduce a Planning Partnership between councils and State government.

## Western Sydney Planning Partnership

The Western Sydney Planning Partnership will align growth and enabling infrastructure for the Western Parkland City. The Planning Partnership includes the councils of the City and the adjoining Blacktown City Council, the Department of Planning and Environment and the Greater Sydney Commission, working in consultation with the Australian Government.

The Planning Partnership model provides greater scope and capability to improve planning processes and coordinate better development outcomes. It removes jurisdictional boundaries – instead of the traditional approach where a council or the NSW Government rezones land, assesses development proposal or delivers infrastructure without integration with other plans or investments. The Planning Partnership will enable coordinated delivery of the rezoning of land that also integrates with the planning and delivery of infrastructure. It is also expected to facilitate new design standards that would be used for sustainable greenfield development throughout the Western Parkland City.

Campbelltown Council, Transport for NSW, Roads and Maritime Services and the Department have formed a coalition to confirm priorities for road upgrades in Campbelltown local government area. This will allow a collaborative approach to delivering improvements to support growth.

## Collaboration with landowners

The scale of investment required to deliver this plan provides opportunities for innovation that will come from collaboration with the private sector. A number of major land holdings exist throughout the Growth Area. In the renewal corridor, Campbelltown Council holds strategic land adjoining the rail line and the State Government owns land at Glenfield. In the Land Release precincts, the area is held in large parcels in contrast to more fragmented precincts in the South West Growth Area. For larger development opportunities, the private sector can fund and construct infrastructure upfront, unlocking land for homes and jobs.

## Setting the plan within the landscape

In the northern part of the Growth Area, there is a strong corridor of mixed residential and industrial uses with the opportunity for local urban renewal and improvement. Older detached housing close to stations could be replaced over time with apartments. This is essential to meet the changing housing and employment needs of the community, the aging population and expected smaller household sizes. This plan aims to meet the needs of the population while conserving local character including heritage and environmental values.

The Land Release precincts south of Macarthur are enclosed between the Georges and Nepean Rivers to the east and west respectively and the Scenic Hills in the north. Vegetation communities of the Cumberland Plain and the species they support are connected to the woodlands of the Woronora Plateau, conserved in defence land, the National Park and protected Water Catchment Special Areas. This plan provides the opportunity to protect and enhance the environmental values, including important koala colonies, across the Growth Area.

## Setting the plan within the place

Providing local, high quality jobs for Greater Macarthur is a key challenge of the plan. Significant investment and collaboration is needed to achieve a 30-minute city. As identified by Campbelltown Council, dispersed housing and a dependency on remote centres need to be addressed to improve the quality of life for local communities. The plan enables refocusing of employment from commuting to harnessing the local labour force for local businesses. A stronger catchment and demand for services in Campbelltown-Macarthur through growth is expected to increase investment in higher order employment.

The Macarthur and South West have a distinct history and culture founded on the settlement of the district by Governor Macarthur. Local enterprise and innovation have been a feature of the history of the area. The strategic position of Campbelltown-Macarthur has been recognised in a number of plans for Sydney. This area has the potential to help meet the current and expected demand for housing in the Western City, which is unprecedented. To meet the needs of aging, growing and multi-cultural populations, housing typologies need to shift from large scale detached housing to more compact forms with shared amenities and services.

## Setting the plan within the economy

Greater Macarthur Growth Area has a diverse local economy characterised by:

- strong local service industries in the corridor between Ingleburn and Macarthur
- a growing health and tertiary education precinct at Campbelltown-Macarthur
- commercial and retail services in local centres with over 10,000 jobs in Ingleburn
- rural and extractive industries in the southern Land Release precincts.

A large proportion (64%) of Campbelltown residents leave the local government area every day for work. A challenge for *Greater Macarthur 2040* is to increase the proportion of local jobs to achieve the 30-minute city for more residents.

The area has a number of strengths and opportunities for economic and employment growth:

- availability of land
- scenic qualities and environmental assets including water, bushland and wildlife
- opportunity for redevelopment along the rail corridor
- connectivity with the Hume Motorway
- proximity to the Western Sydney Aerotropolis
- large population on completion with associated demand
- active developers investing in the area.

Strategic opportunities identified for the Growth Area include additional tertiary education, private hospitals, industrial precincts and tourism, especially orientated to the natural environment.



# COMMUNITY CONSULTATION

**The Department exhibited the Greater Macarthur Land Release Investigation Land Use and Infrastructure Analysis and the draft Glenfield to Macarthur Urban Renewal Corridor Strategy in late 2015 and placed the proposed Greater Macarthur Growth Area boundary on exhibition in August 2016.**

The consultation process included announcements on the Department's website, email notifications and social media posts.

Following a review of submissions, the Department made some amendments to and finalised the plans for the following six of seven train station precincts in late 2017:


- Macquarie Fields
- Ingleburn
- Minto
- Leumeah
- Campbelltown
- Macarthur.

Rezoning within these precincts can now occur through:

- the Planning Partnership
- planning proposals submitted by landowners to councils. These proposals need to be consistent with the relevant precinct plan
- Council-led local environmental plan amendments
- NSW Government-led amendments for certain precincts.

The Department is updating the Precinct Plan for the Glenfield Planned Precinct following the NSW Government's proposal to relocate Hurlstone Agricultural High School and reconfigure the education facilities at Glenfield.

**302**   
Email notifications

**340**   
Formal submissions

**10**   
Council or  
forum briefings

**5**   
Community  
information sessions

  
**16,000**  
Website visits

**8**   
Weeks  
of public  
exhibition

  
**130k**  
reached via  
Facebook

# Greater Macarthur Growth Area Planning Framework

**Greater Sydney  
Region Plan**

**Western City  
District Plan**

**Greater  
Macarthur  
2040**  
*This document*

**Precinct  
Plans**

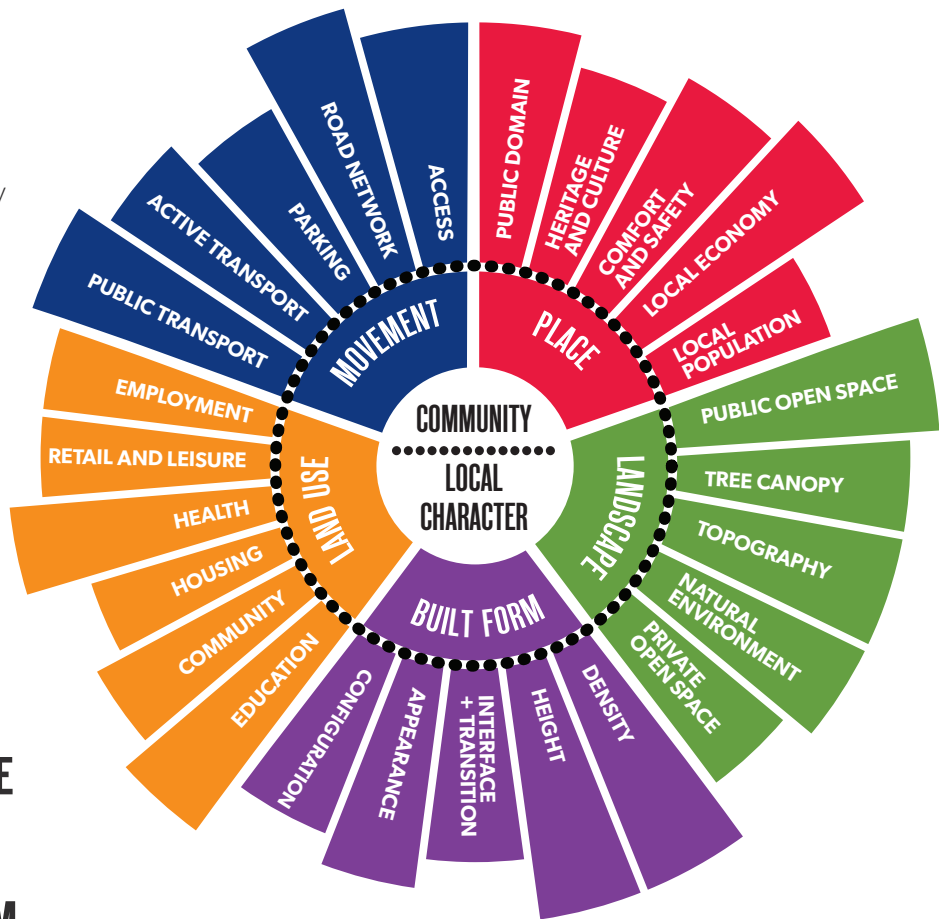
**Neighbourhood  
Plans**

# ABOUT THIS PLAN

**This plan is based on the five themes that collectively encompass an area as experienced by people: place, land use, movement, landscape and built form.**

*Greater Macarthur 2040* is based on technical studies, ongoing community engagement, submissions received during the exhibition period and consultation with councils and State agencies.

It provides a framework to guide development and identify the infrastructure needed to support this growth. The plan includes strategic land use and infrastructure planning across the Growth Area.



**PLACE**



**LANDSCAPE**



**BUILT FORM**



**LAND USE**



**MOVEMENT**

**Longer spokes on the local character wheel represent those elements that are most valued by the community based on consultation undertaken to date.**



## Technical studies

Following exhibition of the draft Interim Land Use and Infrastructure Analysis in 2015, additional work was completed to build on existing technical studies, and to finalise the studies.

This work investigated:

- transport
- ecology
- mining
- economic development
- social infrastructure
- heritage
- water quality.

Further studies will guide the next phase of precinct planning. These studies will be conducted through the Western Sydney Planning Partnership.



Desired future character for the Glenfield precinct



# PLACE



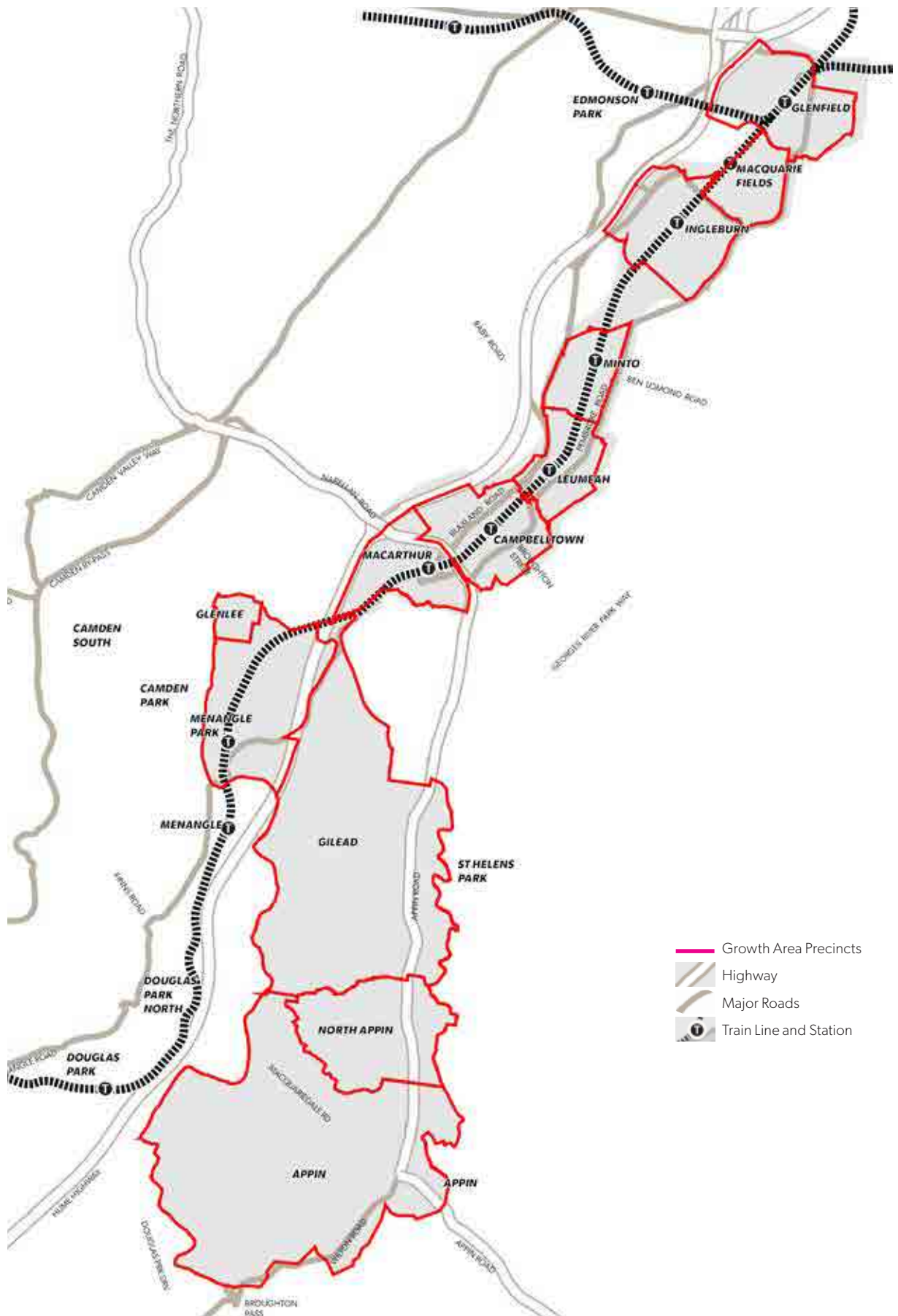
**Greater Macarthur is an area that has been built around a shared sense of community values and culture. It contains centres and neighbourhoods that have a unique mix of people, history, culture and the natural environment. The *Greater Sydney Region Plan* puts place-based planning at the forefront of planning for Greater Macarthur. *Greater Macarthur 2040* focuses on delivering public benefits that provide a combination of the following:**

- well-designed built environment: great places are enjoyable and attractive, they are safe, clean and flexible with a mix of sizes and functions
- social infrastructure and opportunity: great places are inclusive of people of all ages and abilities, with a range of authentic local experiences and opportunities for social interaction and connections
- fine grain urban form: great places are walkable, of human scale, with a mix of land uses including social infrastructure, amenity and local services at the heart of communities
- koalas are not just protected but embraced for the growth and development of the community.

The Greater Macarthur Growth Area includes 12 precincts, Figure 4. The Glenfield to Macarthur urban renewal corridor contains seven of the precincts which provides opportunities for a range housing types, jobs, open space and recreation. Five land release precincts south of Campbelltown-Macarthur will deliver low to medium density homes, new jobs, schools, parks and community facilities.

These communities will be great places to live and work. They will recognise and celebrate the local character of places, people and the natural environment. Greater Macarthur will raise the prominence of place, encourage a diversity of activity and build stronger connections between people and place. Precinct-level planning will support local collaboration to give the community a direct say in how their neighbourhoods are developed.

Figure 4: Precincts



Each of the Growth Area's 12 Precincts has a distinct character and development capability. Seven precincts are located along the rail corridor, which will be renewed to provide medium to high density homes and jobs. New land release precincts will deliver low to medium density homes along with employment. Goals for these precincts are outlined below.

### **Glenfield**

- Create a new mixed-use precinct centred on the rail corridor, providing a variety of housing types and local jobs within walking distance of the station.
- Create a sporting hub with education and health facilities.
- Enhance local centres with increased amenity and local services for residents and commuters.
- Provide ground floor retail and local jobs within the mixed-use centre to generate activity.
- Provide a range of building heights, with higher rise buildings closest to the station, to maximise pedestrian activity and increase trade for local businesses.

### **Macquarie Fields**

- Establish a small-scale mixed use centre adjacent to the station.
- Provide ground floor retail and local jobs within the mixed use centre to generate activity.
- Provide a range of building heights, with increased heights closest to the station to maximise pedestrian activity and increase trade for local businesses.

### **Ingleburn**

- Maintain the scale and village feel of Ingleburn town centre by restricting buildings fronting Oxford Road to two storeys, with higher buildings set back from the street.
- Enable higher residential and commercial buildings between four and eight storeys close to the station and surrounding the town centre to maximise pedestrian activity and increase trade for local businesses.

### **Minto**

- Generate activity with ground floor retail and local jobs in the centre.
- Provide a range of building heights, with higher buildings close to the station to maximise pedestrian activity and increase trade for local businesses.

### **Leumeah**

- Redevelop Campbelltown Sports Stadium and surrounding lands as a regionally significant precinct and gateway to Campbelltown-Macarthur.
- Create ground floor retail and mixed residential uses in the enhanced local centre to generate activity around the highly visible station.

### **Campbelltown**

- Provide a range of building heights, with high rise buildings close to the station to maximise pedestrian activity and increase trade for local businesses.
- Retain the character of areas east of Lindesay Street, with a mixture of detached dwellings, townhouses and terraces.
- Plan for a large floor plate, campus-style office park west of the station.

### **Macarthur**

- Provide a range of building heights, with taller buildings close to the station to maximise pedestrian activity and increase trade for local businesses.
- Retain the character of areas east of Gilchrist Avenue, with a mix of detached dwellings, townhouses and terraces.
- Plan for a large floor plate, campus-style office park west of the station.

### **Glenlee**

- Provide a range of industrial uses through industrial precincts.
- Generate employment with local jobs in the centre.
- Upgrade road connections to support the industrial precincts.

### Menangle Park

- Rezone and release land for urban development.
- Deliver around 4,000 new homes.
- Create a new town centre providing local retail and commercial services.

### Gilead

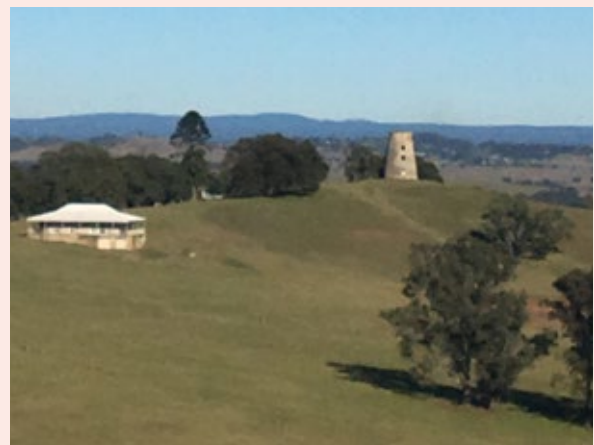
- Achieve higher density residential development around the future centres and along the transport corridor.
- Rezone and release land for urban development.
- Deliver around 15,000 new homes within a scenic landscape.
- Conservation of biodiversity corridors and waterways.
- Create a central transport corridor to connect public transport to the Campbelltown to Macarthur rail lines.
- Create road upgrades and connections to Appin and Douglas Park.

### North Appin

- Achieve higher density residential development around the future centres and along the transport corridor.
- Rezone and release land for urban development.
- Deliver around 5,000 new homes.
- Separate precinct from Gilead and West Appin by creating green corridors.

### Appin

- Achieve higher density residential development around the future centres and along the transport corridor.
- Rezone and release land for urban development in the long term.
- Deliver around 15,000 new homes in the longer term.



## Heritage

### Objectives

The heritage and history of Greater Macarthur contribute significantly to the region's unique identity. The *Greater Sydney Region Plan* and the *Western City District Plan* both place great importance on the identification, conservation and enhancement of the District's heritage by stating that planning authorities should:

- engage with the community early in the planning process to understand heritage values and how they contribute to the significance of the place
- apply adaptive re-use and interpreting of heritage to foster distinctive local places
- manage and monitor the cumulative impact of development on the heritage values and character of places.

*Greater Macarthur 2040* recognises the role that the region's Aboriginal and European heritage has in connecting people to their history and community and how they shape the District's culture and identity. As the Greater Macarthur Growth Area is developed, planning will limit the impacts on important heritage items. Further investigations will identify areas of heritage value early in the planning process. Where appropriate, significant heritage items will be preserved for long-term protection from development with adequate curtilages.

### Now

The Growth Area is located at the interface between land originally inhabited by the Darug, Dharawal and Gandangara people, who would have met to feast, conduct business and perform ceremonies.

Aboriginal and archaeological and cultural heritage investigations and engagement with the Aboriginal community have identified the presence of Aboriginal objects/sites of significance and areas of cultural value.

These sites and objects are mainly located along the Nepean River and its tributaries, which are not suitable for development. Known or predicted sites of Aboriginal significance include important sites for subsistence activities along the lagoons and creeks, a traditional story place, and a massacre and burial site.

European heritage items reflect the area's pastoral history, including links to early farming activity by Macarthur at Camden Farm. These include Glenlee (outbuildings, garden and lodge), Sugarloaf Farm (Mt Huon), Beulah, the Upper Canal System, Macquarie Fields House and Windmill Hill (North Farm). Heritage items will need to be protected from development. While not currently on the State Heritage Register, Mount Gilead is potentially of State significance. Most of the remaining identified heritage items are locally listed. Local site-specific studies may identify other sites.



Macquarie Field House, Macquarie Fields, around 1988  
Photograph © Solomon Mitchell, courtesy Sydney Living Museums



To better inform future planning, rezoning and development processes in the Growth Area, the Department prepared archaeological studies to:

- provide a framework for the research, assessment and management of heritage items and archaeological sites that require further investigation to support detailed precinct planning
- identify areas of high, medium and low heritage sensitivity based on predictive modelling
- ensure consistency in Aboriginal and non-Aboriginal assessments
- facilitate the development of a regional archaeological zoning plan
- identify, in accordance with the Office of Environment and Heritage guidelines, the appropriate Aboriginal representatives to be involved in further studies.

Areas set aside for long-term protection from development will need to preclude any activities and require active management within the protection curtilage. Mechanisms to ensure this will be determined at precinct planning stage and will include:

- public or trustee ownership and funding for conservation of significant sites
- agreements for the adaptive re-use and management of sites by the private sector including commitments to funding for ongoing conservation.



© Bluedawe: Upper Nepean Canal, Appin.  
Wikimedia Commons

### **WaterNSW Upper Canal**

The Upper Canal, which forms a major component of the Upper Nepean Scheme and provides water to Sydney from the four Upper Nepean dams, crosses through land release areas in the south of the Growth Area. The Upper Nepean Scheme supplies water from the Cataract River at Broughtons Pass to the Prospect Reservoir. The Upper Canal commences by tunnel from Pheasant's Nest Weir on the Nepean River and extends through the Local Government areas of Wollondilly, Liverpool, Holroyd, Fairfield, Campbelltown and Camden.

The Canal system also has significant heritage value, and is a State Heritage-listed item. The Office of Environment and Heritage view the Upper Canal System as:

- aesthetically significant, running in a serpentine route through a rural bushland setting as an impressive landscape element with sandstone and concrete-lined edges
- significant as it demonstrates the techniques of canal building, and evidence of engineering practice.

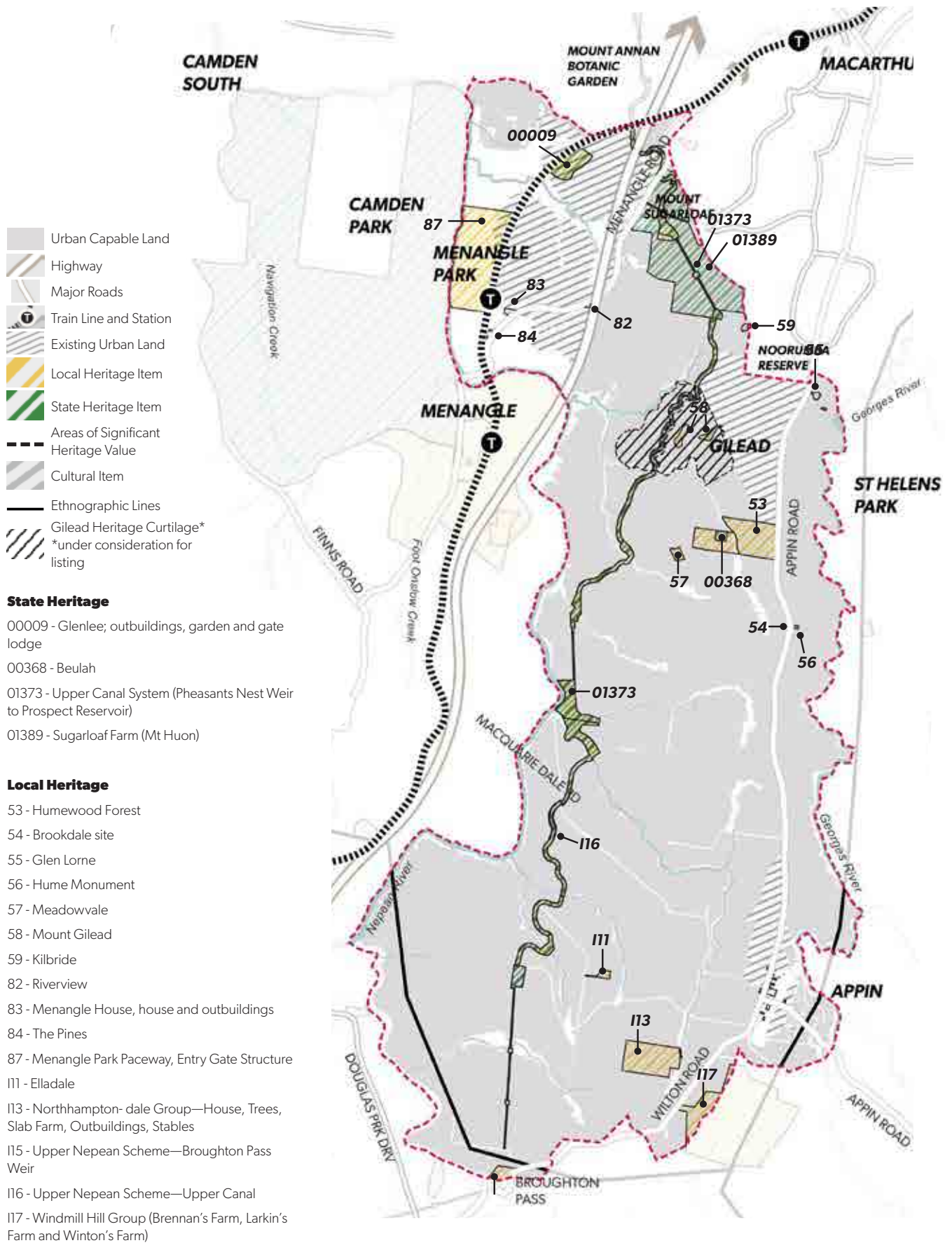
The Canal has a number of tunnels and nine aqueducts in the Growth Area that form part of the upper canal. WaterNSW retains ownership of the corridor in its entirety within the Upper Canal Corridor. WaterNSW consent must be obtained prior to consideration of any development or works that traverse the canal or within the canal corridor.

The *Water NSW Act 2014* and associated *Water NSW Regulation 2013* include controls and penalties designed to protect the water supply infrastructure and drinking water quality from pollution, damage, trespass or other unauthorised activities.

Consultation with WaterNSW should occur as early as possible for any development proposal potentially affecting the Upper Canal corridor. WaterNSW will assess proposed developments and activities adjacent to or within the controlled areas to ensure the protection of water quality and WaterNSW infrastructure, the continued safe operation and maintenance of the canal and pipelines, and the consideration of the future construction of a new supply pipeline to replace the Upper Canal.

Guiding principles have been adopted by WaterNSW when considering development proposals adjacent or within the controlled areas.

Figure 5: Heritage





## Planning principles

Precinct planning must:

- **be informed by Aboriginal Cultural Heritage Assessments**, including consultation with the Aboriginal community
- **include further investigation** to define appropriate design of precincts to protect heritage significance
- **address sympathetic adaptive re-use** of heritage items consistent with their significance opportunities for using heritage item curtilages for open space or environmental conservation and where appropriate, to preserve the character of the area and identified cultural values
- **protect all heritage items** from development.

## Public domain

### Objectives

A place-based approach to planning emphasises high quality, community-specific, public domain outcomes that capitalise on the community's characteristics.

As Greater Macarthur develops, high quality public places that provide opportunities for interaction, recreation and leisure will be required. These places will enhance activity around centres to include streets, plazas, parks and recreation spaces, providing opportunities to hold community events, markets and festivals.

The NSW Government's new *Five Million Trees for Greater Sydney Program* seeks to increase tree canopy coverage in Sydney from 16.8% to 40%. Greater tree canopy means healthier neighbourhoods, more shade, cooler suburbs and habitats for our wildlife. Precinct planning will include a Green Plan that will review and analyse recommendations on open space, landscaping and tree canopy coverage.

### Now

In developed areas, the Growth Area is largely a suburban region, with low density residential development along the Glenfield to Macarthur corridor. Residents rely on road and rail connections to Sydney CBD and other centres.

Town centre and local shopping strips are close to train stations and well used by pedestrians. These areas typically contain a commercial retail core centred around the daily needs of the local community. Suburban areas predominantly contain low density residential uses in a variety of street types and subdivision patterns.

New development offers opportunities to improve public places including plazas, activated main streets and shopping strips with safe and well-designed pedestrian links, creating spaces and places that are more diverse and interactive.

## Planning principles

Precinct planning must:

- **create public plazas, activated main streets** and shopping strips that shift shopping centres into public places that are more diverse, clustered and innovative
- **value and preserve the natural environment** in new places
- **create places where a diverse local community** can come together
- **provide streets that offer shared environments** for pedestrians, cyclists and motor vehicles and have ample footpaths
- **deliver high quality public domain space** including appropriate furniture, bus stops, street lights, seating, bins, bicycle parking, that is comfortable, safe and integrated with the environment
- **ensure street design considers people and end users** as an integral part of the public domain design and be accessible and safe to all (wheelchairs, prams, visually impaired) and provide an outdoor setting that promotes activity and creates street life
- **create innovative and creative places** via public art that integrates with the area's cultural heritage and natural environment, including outdoor monuments, memorials and artworks that recognise and celebrate Aboriginal heritage and stories in public places
- **integrate Green Plans** that will underpin the neighbourhood structure and identify how a 40% tree canopy cover, green links, tree-lined streets and shaded environments can be achieved
- **create high quality and adequate open space** and parklands.

## Land ownership

### Objectives

The NSW Government is committed to working with landowners to help deliver housing, jobs, infrastructure and services to support growing communities. *Greater Macarthur 2040* will offer a framework for the Department and councils to work with landowners to:

- rezone land for public release which will be subdivided and developed for new homes
- provide a variety of housing choice that is affordable to suit the needs and lifestyle of the local community
- create local centres that will be owned and operated by businesses that serve the local community
- provide the necessary transport infrastructure through public transport and road corridors to enable efficient vehicle movement throughout the Greater Macarthur Growth Area
- provide the necessary regional infrastructure such as schools, open space, park and recreation facilities and hospitals.

*Greater Macarthur 2040* provides opportunities for:

- private home ownership for around 18,000 new homes in the urban renewal precincts in the north of the Growth Area and approximately 40,000 new homes in the land release precincts in the south of the Growth Area, with an aim to meet the affordable housing target recommended in the *Western City District Plan*
- employment and social services creating 40,000 local jobs, with opportunities for small business ownership in and around local centres and more intensive employment activities in designated areas
- public transport and road infrastructure that stays in public ownership
- new primary schools and high schools owned by the NSW Government
- open space, parks and recreation facilities owned and managed at the local and regional level
- protection of key conservation areas, including a koala corridor.



Desired future character for the Minto precinct, Redfern Road

## Now

In the north of the Growth Area from Glenfield to Macarthur, urban land is highly fragmented. Such fragmentation has led to land use patterns along this corridor that vary from lower density residential neighbourhoods to the higher density Campbelltown. Employment areas including Ingleburn and Minto accommodate large format light industry, warehousing and logistics centres.

In the land release areas in the south of the Growth Area, land is predominantly owned by major developers with some private and government land holdings. Larger land holdings provide the opportunity for the private sector to fund infrastructure upfront and ensure that it is delivered with development.



## Regional infrastructure

### Objectives

The *Greater Sydney Region Plan* and the *Western City District Plan* emphasise an innovative approach toward infrastructure delivery that focuses on delivering vital services such as roads and public transport, public spaces, schools, hospitals and community facilities. Regional infrastructure should be sequenced and aligned with forecasted growth. The 30-minute city will give people access to housing, jobs and vital community facilities within a short distance from their homes. Infrastructure planning should be a collaborative approach between government, industry and local communities to enable the best use of resources such as public spaces, school ovals and community facilities.

The provision of new regional infrastructure to service growth including major roads and land for health and education will be incorporated in a Special Infrastructure Contributions (SIC) scheme. The necessary infrastructure for the land release areas in the south of the Growth Area will be funded by developers generally at no additional cost to government.

Campbelltown City Council, Camden Council and Wollondilly Shire Council will prepare a Section 7.11 Local Contributions Plan. The Department will assist councils to cost local infrastructure upgrades recommended in the Section 7.11 Plan and coordinate with the infrastructure items to be partly funded through the SIC.

### Now

The Growth Area is well serviced by large regional open space, including the Dharawal State Conservation Area. Much of this space is used for passive recreation and does not meet the full range of needs, such as fitness and team sports.

Menangle Park Paceway, in the north of the land release areas in the south, is a harness racing competition facility. Although there are few facilities within the broader area, nearby sport and recreation facilities include the Ambarvale Sports Complex.

The Growth Area is served by regional health, education, cultural, sport and recreation infrastructure, as well as emergency services. These include local and district courts (Campbelltown, Camden, Liverpool), ambulance stations (Campbelltown, Camden), HJ Daley Central Library, Campbelltown Arts Centre and Camden Civic Centre.

Regional health facilities are provided by NSW Health through the South Western Sydney Local Health District (SWSLHD). Health services include two public metropolitan hospitals, three community health centres and one youth health service. There is also a private hospital in Campbelltown.

Campbelltown Hospital is a major tertiary hospital and a key employer within the area. The NSW Government has committed \$632 million towards Stage 2 of the Campbelltown Hospital Redevelopment.

## Utilities

### Objective

The Department, local councils and State agencies will work together to meet the objective of providing essential utilities to support residents and the activities of local businesses.

The primary utility providers are Sydney Water, Endeavour Energy, Jemena and NBN. Feasibility applications and subsequent consultation has been informed by the following directions.

### Now

Existing services infrastructure networks in the land release precincts in the south of the Growth Area are generally limited, supplying only the existing semi-rural development. The existing network infrastructure is generally aligned with the existing roads, with the majority of existing trunk services contained within Wilton Road, Appin Road and between the Hume Highway and Appin Road.

The Glenfield to Macarthur corridor in the north of the Growth Area is well serviced by electricity, drinking water, waste water, gas supply and communications. Overall, there is sufficient capacity in the existing system to service projected growth.

As the Glenfield Planned Precinct develops, some services including water, sewer and energy will require amplification. A new electricity substation will be constructed west of the rail line and recycled water will be available.

### Water services

Sydney Water has prepared a preliminary strategy to service the land release precincts in the south of the Growth Area. Wastewater services can be provided to the initial development of Menangle Park and parts of Gilead precincts via connection to the existing Sydney Water system. This would occur via Glenfield to the Malabar wastewater treatment plant. Capacity is available to service development forecast to occur until 2025.

Later stages of land release will require the construction of at least one new wastewater treatment plant. Depending on the rate, timing and location of development, and if Sydney Water is the service provider, it may provide one plant central to the land release precincts in the south of the Growth Area and the neighbouring Wilton Growth Area or two new plants in Menangle and Wilton.

Water services can be provided through a combination of extension to existing systems and supply from the Macarthur Water Filtration Plant. New reservoirs and trunk and distribution mains will be required. Sydney Water will continue planning to service the Growth Area and consider the standards of treatment required in consultation with regulators, cost effective and reasonable options to service the area, and the financial viability of providing recycled water in precincts serviced by new treatment plants.

Any decision by Sydney Water to fund infrastructure will need to meet the principles of its Growth Servicing Plan.

### Telecommunications

NBN will provide infrastructure as part of the Telecommunications Infrastructure in New Development (TIND) Policy.

### Natural gas supply

In the south of the Growth Area, Jemena has assessed Gilead and Menangle Park separately. Jemena has indicated that a supply to Gilead is economically viable. Menangle Park is not considered viable to supply at this stage as a significant contribution is required to provide the lead-in infrastructure. The eastern gas pipeline traverses the growth area and Jemena's requirements for construction crossing and adjoining the easement will need to be met. Sensitive landuses including aged care facilities will not be permitted in close proximity.

### Power network

In the south of the Growth Area, there is capacity within existing zone substations to supply 6,900 lots in Menangle Park, Gilead, Wilton and West Appin.

By 2021 new zone substations need to be established in Menangle Park and Mount Gilead with associated new 66kV feeder connections. Supply for the project development rate by 2026 requires:

- augmentation of existing Maldon zone substation
- completion of Menangle Park and Gilead zone sub-stations
- augmentation of up to 50 kilometres of 66kV sub-transmission cabling
- a new zone substation when land is released in West Appin.

### Planning principles

Precinct planning must:

- **identify required regional infrastructure** including roads, public transport and regional walking and cycling facilities
- **incorporate the required social infrastructure** including health, education, open space and community facilities
- **provide good quality enabling infrastructure** such as water, wastewater and electricity
- **identify water management systems** to protect in-stream water quality.





# LANDSCAPE

**Environmental conservation and protection are central to the sustainable development of Greater Macarthur. Greater Macarthur is home to a range of unique flora and fauna including koalas.**

## Landscape character

### Objectives

The *Greater Sydney Region Plan* and the *Western City District Plan* recognise that the District's natural landscape is a great asset and attractor, sustaining and supporting a unique, parkland city. These plans also consider the importance of community and cultural life in contributing to a distinct local character.

The *Greater Sydney Region Plan* places emphasis on preserving local character through the growth process by recognising the distinctive and valued combination of characteristics that contribute to local identity.

The Western Sydney City Deal includes a \$150 million Liveability Program which will enable growth to respect and build on local character.

The *Western City District Plan* seeks to protect and enhance landscape character by:

- linking walking and cycling paths, bushland and a green urban landscape
- enhancing and protecting the Hawkesbury-Nepean river systems
- mitigating the heat island effect and providing cooler places by extending urban tree canopy and retaining water in the landscape
- protecting the District's natural landscapes, heritage and tourism assets, unique rural areas and villages
- protecting the environmental, social and economic values of the Metropolitan Rural Area.

The *Western City District Plan* also sets key planning priorities that will contribute toward enhancing the landscape character of Greater Macarthur Growth Area by maintaining its distinct natural assets. Planning priorities include:

- protecting and improving the health and enjoyment of the district's waterways
- protecting and enhancing bushland biodiversity.
- increasing urban tree canopy cover and delivering green grid connections
- protecting and enhancing scenic and cultural landscapes
- better managing rural areas.

Each of the 12 precincts has a distinct character and development capability, ranging from the rural landscapes in the south to the urban form of the north. Precinct planning for six of the seven precincts in the north, the re-exhibited plan for Glenfield, and precinct planning for the land release precincts in the south of the Growth Area will conserve the landscape and visual qualities of the Growth Area.

### Now

The landscape south of Menangle Creek is characterised by relatively flat and open pastoral land with scattered tree cover, of low to moderate scenic value.

North of Menangle Creek, the landscape forms part of the Scenic Hills. Undulating open hills are features in the landscape, particularly when viewed from surrounding areas. A high point along the eastern boundary provides views of Mount Gilead windmill.

The eastern half of Menangle Park Precinct is characterised by open floodplains that have been extensively cleared of vegetation and is of low scenic quality.



The Razorback Range to the west is a dominant landform providing high impact vistas from within the precincts.

Ridgelines and slopes over 20% provide important scenic values for residents and tourists.

## Planning principles

Precinct plans for land release areas will be developed. Precinct planning must:

- **be informed by a landscape assessment** to take advantage of and retain key landscape features of the area, including high points, views to surrounding areas, creeks and areas of existing vegetation
- **provide street and open space networks**, that respond to the development density and form, and align with the landscape character and topography of the area
- **be informed by Green Plans.**

A Green Plan is a technical planning document that focuses on the provision of tree canopy and high quality integrated open spaces. It aims to provide the right kind of public open spaces that respond to the community's needs and expectations.

Green Plans analyse the size, typology, distribution, relationship and accessibility of the existing open space and tree canopy to gain an understanding of the current provision of trees/canopy/open space and how it serves the existing community. This current provision establishes a benchmark for targets for open space and green infrastructure network.

## Biodiversity

### Objectives

The *Greater Sydney Region Plan* and The *Western City District Plan* both emphasise that the protection and enhancement of bushland biodiversity should take priority in the planning process for the Western City District.

### Strategic conservation planning

A thriving, liveable Western Sydney should include a place for the area's many native plants and animals. The Cumberland Plain is home to around 160 threatened species, including the largest koala population in Sydney.

The Department is undertaking strategic conservation planning for the Growth Area. This includes a landscape-scale assessment of the environmental impacts from future urban development, transport and key infrastructure development and the Cumberland Plain Conservation Plan (CPCP). This will enable land to be certified for development avoiding areas to be conserved.

The CPCP aims to identify conservation measures to protect a range of threatened flora and fauna species and ecological communities. A key consideration in the CPCP will be conservation measures that maintain and protect the Wollondilly and Campbelltown koala population. These conservation measures will incorporate current and emerging research on the koala population in the region including OEH work on a regional koala strategy.

Environmental conservation and protection are central to sustainable development of Greater Macarthur. The urban development footprint defined for the Growth Area is determined by the CPCP and will, where possible, avoid, minimise or mitigate the impact of development on the area's sensitive ecology and biodiversity values. One of the key considerations would be the provision of viable biodiversity corridors separated from development in perpetuity.

The CPCP streamlines environmental assessments and approvals under relevant State and Commonwealth legislation and conservation planning on a landscape scale. The final CPCP will be administered by both State and Commonwealth Ministers.

The CPCP seeks to balance biodiversity impacts in the biocertified areas through protection of high conservation value core and corridor areas, revegetation and renewal, protection using development controls and investment in species recovery initiatives.

Work to finalise the strategic biocertification and strategic assessment for the Greater Macarthur Growth Area is underway. A determination on development impacts and associated conservation measures may result in amendments to the urban development zone shown within this plan. The approved CPCP will inform the final urban development footprint in the future precinct plans and the conservation outcomes for the Growth Area.

The Department has undertaken field surveys to identify the biodiversity values in the Growth Area so that precinct plans can avoid, where possible, or minimise biodiversity impacts. Preliminary mapping of core biodiversity sites is shown on Figure 6.

### **Protecting koalas**

The Greater Macarthur forms the western edge of extensive eucalypt woodlands on sandstone and shale soils, reaching from the Georges River across to the Royal National Park in the east. These woodlands and forests, influenced by three major river systems (Georges, Woronora and Hacking), provide extensive koala habitat within protected and reserved areas across the Woronora Plateau.

Creating a buffer between the koala habitats of the Woronora Plateau lands and the urban development areas of existing Campbelltown and the new areas of Greater Macarthur, is critical to the protection and expansion of known koala colonies.

The Structure Plan for the land release precincts in the south of the Growth Area identifies that development is not proposed for areas east of Appin Road to assist in protecting this primary koala movement corridor. The objective for this area would be to facilitate its revegetation and ongoing conservation to maintain and protect the Wollondilly and Campbelltown koala populations. Significant parts of this corridor are already in public ownership. The CPCP will identify the proposed management approach for the corridor for conservation. Should the land not be needed for conservation, the Department will consider appropriate land uses that complement and are designed around koala protection.

The Office of Environment and Heritage has mapped habitat and movement corridors, ranking the movement corridors into levels of importance for

koalas – primary, secondary and tertiary. Primary movement corridors are considered critical for facilitating gene flow between koala colonies and allowing for the recovery of koala colonies in the event of localised disease-related decline, or stochastic events such as bushfire.

A primary koala movement corridor occurs within and around the southern boundary of the Growth Area extending west to Wilton and Douglas Park. Within the Growth Area, the primary koala movement corridor is along the Georges River, east of Appin Road. East of the Growth Area, the primary koala corridor extends further north along the Georges River from Wedderburn to Glenfield and across to Holsworthy. Koalas have been recorded using this primary koala movement corridor. The corridor has the potential to be augmented by the re-vegetation of around 260 hectares of land that is currently cleared but forms part of the corridor.

Secondary koala corridors to connect areas of habitat along the Georges River to the Nepean River across the Growth Area are also desirable so koalas and other fauna can move across the landscape. This can only be achieved where safe crossing of major roads is practical and secondary corridors are of sufficient width to support koalas. The Structure Plan for the south of the Growth Area identifies areas where crossing of Appin Road and other bisecting roads could be facilitated in future and where broad corridors can be established.

The CPCP will support a regional and coordinated approach to balance impacts to koalas from urban development through measures to protect koala habitat corridors in perpetuity and to restore land to augment and strengthen existing corridors. The plan would also support measures such as koala-proof fencing and development controls to reduce the impacts of vehicle strike and dog attacks.

### **Now**

A strategic biodiversity assessment identified a significant proportion of land from Gilead to Appin as having high or moderate biodiversity value. This includes Critically Endangered Ecological Communities such as Cumberland Plain Woodland and Shale/Sandstone Transitions Forest.

The land release precincts in the south of the Growth Area are crossed by a series of habitat corridors providing green links between the two rivers and important conservation areas, including Noorumba Reserve.



The Nepean River corridor, Ousedale Creek, Simpsons Creek, Georges River, and Elladale Creek corridors, as well as the part of the Cataract River corridor directly adjoining the Nepean River corridor, are identified as Priority Conservation Lands in the Cumberland Plain Recovery Plan. This area represents the best remaining opportunities in the region to secure long-term biodiversity benefits and protect Cumberland Plain Woodland.

Additional corridors along creeks and linked pockets of vegetation support habitat connectivity across the land release precincts.

The vegetation and corridors in the area provide important habitat and migration corridors for koalas, supporting one of the last known koala populations in the Sydney Region.

The Beulah Biobank site (59.6 hectares), sits within the grounds of the Beulah heritage homestead site. Biobank sites have an existing legal commitment to be managed for conservation purposes in perpetuity and are not available for future urban development.

The Growth Area also contains Critically Endangered Ecological Communities. The protection or removal of this vegetation is subject to the CPCP, which will inform precinct planning. Figure 6 shows land that contains important vegetation. It shows areas that must be conserved as a result of the biodiversity

certification process. Other vegetation is identified for assessment at precinct planning stage and may be retained for local amenity, local open space or as a buffer to the conservation areas. Areas that have not been certified under the strategic biodiversity assessment process will require site specific evaluation at precinct planning stage.

### **Opportunities to raise community awareness**

Finalisation of *Greater Macarthur 2040* will be accompanied by a grant program to ensure the koala friendly planning and actions are values held by the new communities of the area. A \$1M grant program (to be released over two years), will fund community groups, landowners and councils to undertake koala research and build greater community awareness. The proposed grant funding requirements will be set out in guidelines (to be released in early 2019), that will identify opportunities for funding for:

- koala research and awareness raising activities across the Greater Macarthur and adjoining areas;
- dedicated koala feed tree replanting on public and private lands to restore and rebuild koala movement corridors; and
- improved pest and feral animal management to help reduce the risk of predation on koalas.

## Planning principles

Precinct planning must:

- **implement** the CPCP in accordance with the approved strategic biocertification and strategic assessment
- **protect land with biodiversity value** and provide a sensitive urban interface that supports and enhances the significance of corridors and reserves
- **avoid, where possible, or minimise impacts on threatened species** and endangered ecological communities within the Growth Area, including Priority Conservation Lands as identified in the Cumberland Plain Recovery Plan
- **protect the integrity and continuity of wildlife** by ensuring:
  - sufficient corridors to support koala communities, with a minimum preferred width of 425 metres for primary corridors
  - dedicated public land with an appropriate management regime
  - expansion of corridors is possible if impacted by utility installations or access
  - protection through the treatment of barriers such as major roads with exclusion fencing
- **restrict land uses** within secondary wildlife corridors to support wildlife movement
- **be consistent with the Office of Environment and Heritage strategy** to protect and rehabilitate preferred koala habitat and migration corridors
- **retain vegetation inside corridors** in open space networks
- **locate bushfire asset protection zones** and stormwater infrastructure outside of the biocertified areas
- **design transport infrastructure and services** to avoid disturbance and fragmentation of areas with high biodiversity values
- **consider how areas of existing vegetation** can add to the character of the new urban area, provide open space and amenity, contribute to the Greater Sydney Green Grid, support riparian protection and water sensitive urban design, provide urban cooling, and support biodiversity
- **provide buffers to conservation areas** including existing and future bushland sites.



## Sustainable design

### Objectives

The NSW Government has released the *NSW Climate Change Policy Framework*, which commits NSW to the aspirational objectives of achieving net-zero emissions by 2050 and helping NSW to become more resilient to a changing climate. The policy framework defines the NSW Government's role in reducing carbon emissions and adapting to the impacts of climate change and sets out next steps for implementation.

The Office of Environment and Heritage provides guidelines on how to adapt the urban environment through urban green cover projects in the *Urban Green Cover in NSW Technical Guidelines (2015)*. Urban green cover includes a range of strategies such as vegetated and reflective roofs, green walls and street tree plantings.

The *Greater Sydney Region Plan* highlights how planning can manage some risks from natural hazards and land contamination through design, landscaping, emergency management, and infrastructure, in some cases, requiring assessment and appropriate management and avoiding development in high risk areas.

The *Western City District Plan* sets key planning priorities for climate resilience and reducing carbon emissions. These are:

- reducing carbon emissions and managing energy, water and waste efficiency
- adapting to the impacts of urban and natural hazards and climate change.

The Department has adopted a place-based approach early in the design of the Growth Area, considering opportunities for open space, walking, cycling, public transport and green cover. The Greater Macarthur Growth Area will be a place where homes and commercial buildings are comfortable and efficient. New buildings will be designed for passive solar benefits, and will efficiently use energy and water, including reuse for non-potable purposes, evaporative cooling, water gardens, and treating waste as a valuable resource.

Adaptable and detailed building design including passive design and construction materials, for example, reflective construction materials, pervious paving surfaces, and green roofs and walls that could contribute to reducing urban heat-island effects, could be applied for new development in the

Growth Area. These controls will be documented in development control plans. Home wood heaters are a significant air emission source exposing the community to harmful particle emissions. New residences should be designed to reduce home heating needs.

Ongoing planning will minimise the ecological footprint of new communities by incorporating Ecological Design Principles during detailed planning and meeting BASIX requirements. Precinct planning will consider the feasibility of measures to substitute grid-source power with alternatives such as tri-generation (green transformers), co-generation (recovery of waste energy), or photovoltaics.

### Now

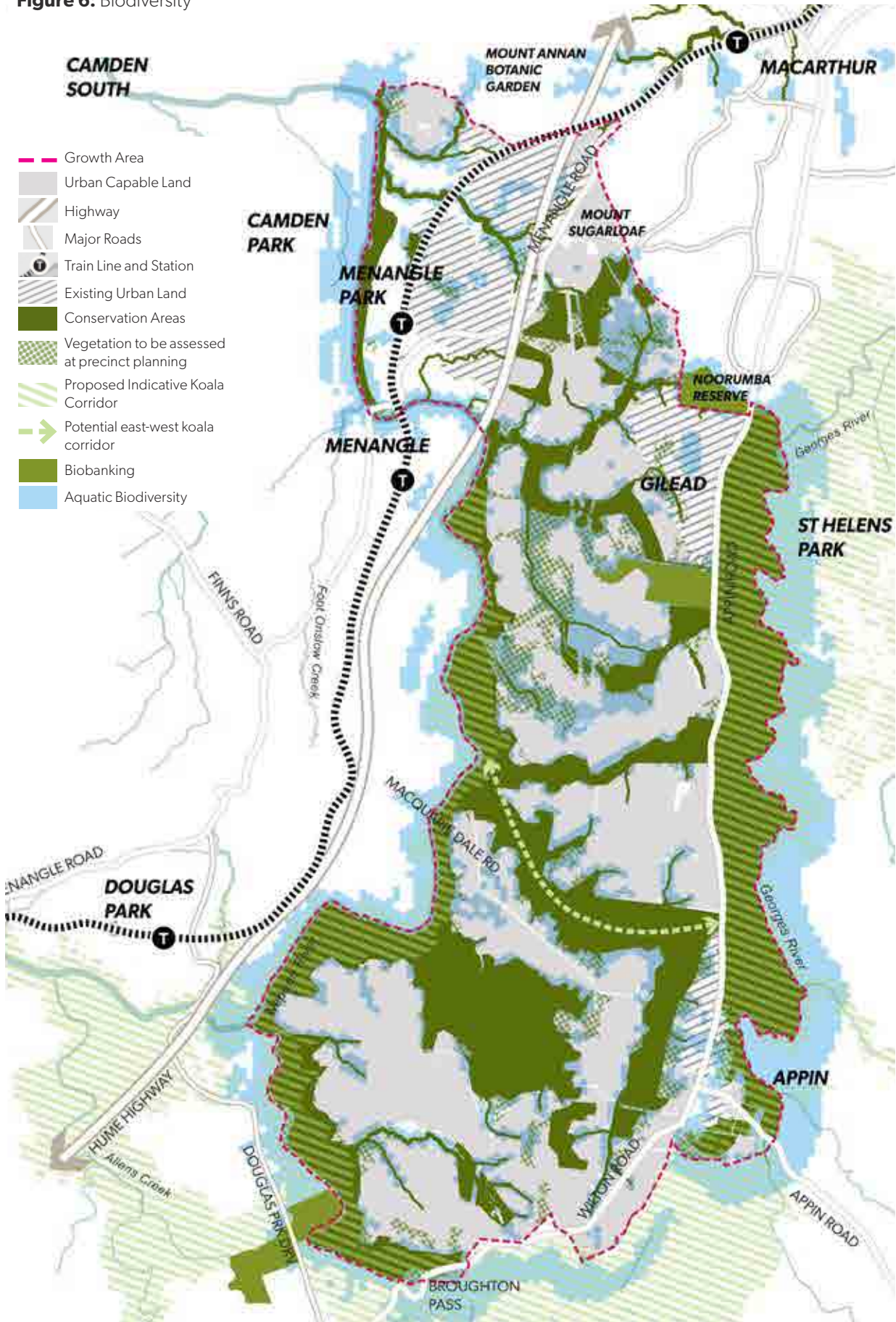
The latest climate change projection data from the NSW Government's NSW and ACT Regional Climate Modelling data indicates that Greater Macarthur will experience an increase in maximum temperatures by 0.7C by 2030 and continue to rise by 1.9C by 2070. Collaboration through precinct planning and the development process will aim to reduce carbon emissions and leverage opportunities for managing energy and water efficiencies. More efficient use of energy and water will have less impact on the environment and reduce greenhouse gas emissions.

### Planning principles

Precinct planning and the development process must:

- **use the best available evidence** base for decisions on housing and infrastructure and assess risks to make sure that people, homes and businesses are not at risk from natural hazards
- **consider opportunities for green cover**, creating open spaces, and permeable and reflective surfaces and heat island effects to avoid increasing urban surface temperatures and effects, especially where there are vulnerable communities
- **incorporate green walls and roofs** to complement local green canopy. External colours and materials should be natural, muted tones of green, brown, blue and grey. White, light-coloured, red, green, yellow or orange roofs and walls should be discouraged
- **design and locate** new roads, bridges, water supply and wastewater systems to be resilient to the future impacts of climate change

Figure 6: Biodiversity



- **increase tree canopy cover** in line with the *5 Million Trees for Greater Sydney* and *Greener Places* Programs.
- **design new development to aim for zero emissions**, including electric vehicle charging infrastructure and the potential for renewable energy power supply
- **consider opportunities for green cover**, creating open spaces, and permeable and reflective surfaces, as outlined in the *Technical Guidelines for Green Cover*, to avoid increasing urban surface temperatures and heat-island effects, especially where there are vulnerable communities
- **create precincts** where home and buildings are energy and water efficient
- **protect ecological footprints** by incorporating ecological design principles during detailed planning and meeting BASIX requirements
- **incorporate ecologically sustainable development principles** that:
  - improve energy efficiency through the design and siting of buildings
  - ensure environmentally sustainable development in terms of energy and water use, and management of waste and discharge (BASIX)
  - encourage the use of low energy materials and construction techniques
- **consider the feasibility of any measures** to substitute grid-source power with environmentally sustainable alternatives such as tri-generation, co-generation or photovoltaics, alongside an urban sustainability precinct tool such as the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability Rating Scheme or Green Star Community rating
- **provide setbacks and locate** residential and other sensitive uses, such as child care centres and schools, away from existing and likely future sources of air pollution, such as busy roads and rail corridors, focusing on busy roads with Annual Average Daily Traffic (AADT) flows, of above 20,000 movements
- **incorporate setbacks** to minimise exposure and odours from agricultural uses
- **limit community exposure** to air pollution through development controls relating to areas such as wood fire heaters or energy efficient building design
- **minimise private vehicle use** by promoting active transport opportunities and access to local services and employment using best practice emission controls to minimise air pollution from industrial and commercial uses
- **include provisions** in development control plans to reduce diesel and other polluting emissions from construction activity.



## Open space, Green Grid and tree canopy (recreation, walking and cycling)

### Objectives

The *Greater Sydney Region Plan* and *Western City District Plan* identify the Greater Sydney Green Grid, a series of green corridors that will connect Greater Sydney. The District Plan identifies priority projects to support the development of the Greater Sydney Green Grid connecting key open space areas in the Growth Area. The *5 million trees for Greater Sydney by 2030* initiative will contribute to more shade, cooler neighbourhoods, and more wildlife.

The *Western City District Plan* sets key planning priorities for open space, urban canopy and green grid connection within the District. These are:

- increasing urban tree canopy cover and delivering Green Grid connections.
- delivering high quality open space that meets the needs of the community
- the provision of regional infrastructure that will include sport facilities.

Open space needs for Glenfield to Macarthur were evaluated in the Corridor Strategy and recommended improvements are outlined in the infrastructure schedule.

In the land release precincts in the south of the Growth Area, while existing local open spaces and sports fields provide for some active recreation, new open space and outdoor sports facilities will be required. Sporting facilities will be planned in line with the Government Architect NSW's draft *Open Space for Recreation Guide* and Wollondilly and Campbelltown council local sports and recreation strategies.

Aquatic facilities will be required for the Growth Area and identified in consultation with major landowners and local councils.

### Now

#### Open space

While existing local open spaces and sports fields provide for some active recreation, new open space and outdoor sports facilities including a mix of local and district parks, playing fields and sports courts are needed.

#### Walking and cycling

Pedestrian connections between major destinations are limited due to topography and barriers created by the rail and road corridors. Improved walking and cycling connections to stations and between precincts, to provide health and environmental benefits for the community and improve access to public transport, are needed.

Walking and cycling can be promoted by providing or upgrading separated cycleways, shared user paths, footpaths, pedestrian refuges, end-of-trip facilities and appropriate landscaping and streetscaping like lighting. Improvements could include:

- a rail crossing with a shared path, pedestrian and cycleway from Badgally Road to Broughton Street
- a new regional cycle route from Glenfield to Macarthur adjacent and perpendicular to the rail corridor to improve connections to stations and the surrounding area
- local walking and cycling network improvements to encourage walking and cycling within precincts.

#### Green Grid and tree canopy

Land within the Menangle Park, Gilead and West and North Appin land release precincts is predominantly rural with some former poultry enterprises and extractive industry. Menangle and Appin are rural villages, with Appin expanding through small-scale residential development.

The south of the Growth Area includes areas of high value vegetation such as native forest and woodland. A series of habitat corridors provide green links and enable key areas of habitat for local flora and fauna. Additional corridors along creeks and linked pockets of vegetation support habitat connectivity across the south of the Growth Area.

Green Plans for each precinct will focus on green infrastructure and open space. These plans will also focus on increasing the extensive tree canopy that will help create liveable places and mitigate impacts of climate change as new communities develop.







## Planning principles

Precinct planning must:

- **implement Green Plans** providing a connected network of open space within and between precincts
- **develop an integrated open space network** including the provision of sport and recreational infrastructure.
- **include legible cycleway and pedestrian routes** that are in high amenity areas to encourage walking and cycling
- **incorporate walking and cycling** in footpaths and crossings
- **set back walking and cycling paths** from high speed environments
- **include pedestrian crossings** to enable pedestrian and cycling access – for example, close to schools
- **provide new shared pathways**, separated cycleways, footpaths, pedestrian refuges, roadway crossings, street tree planting, bicycle storage facilities and lighting
- **introduce regional and local cycle routes** and walking connections
- **provide safe, direct and convenient** pedestrian and cycle paths to interchange areas and centres
- **plan cycle routes** according to different user needs, such as commuters and recreational cyclists
- **provide dedicated off-road cycling** facilities and follow relevant Austroads Standards for paths, such as the *Guide to Road Design Part 6A, Pedestrian and Cyclist Paths (2009)*, and *Cycling Aspects of Austroads Guides (2014)*.

## Water

### Objectives

The Greater Sydney Region Plan places a strong value on waterways. Environmentally sensitive waterways have high biodiversity values and contribute to amenity and economic productivity.

The *Western City District Plan* sets key planning priorities that emphasise protection and improving the health and recreational values of the District's waterways.

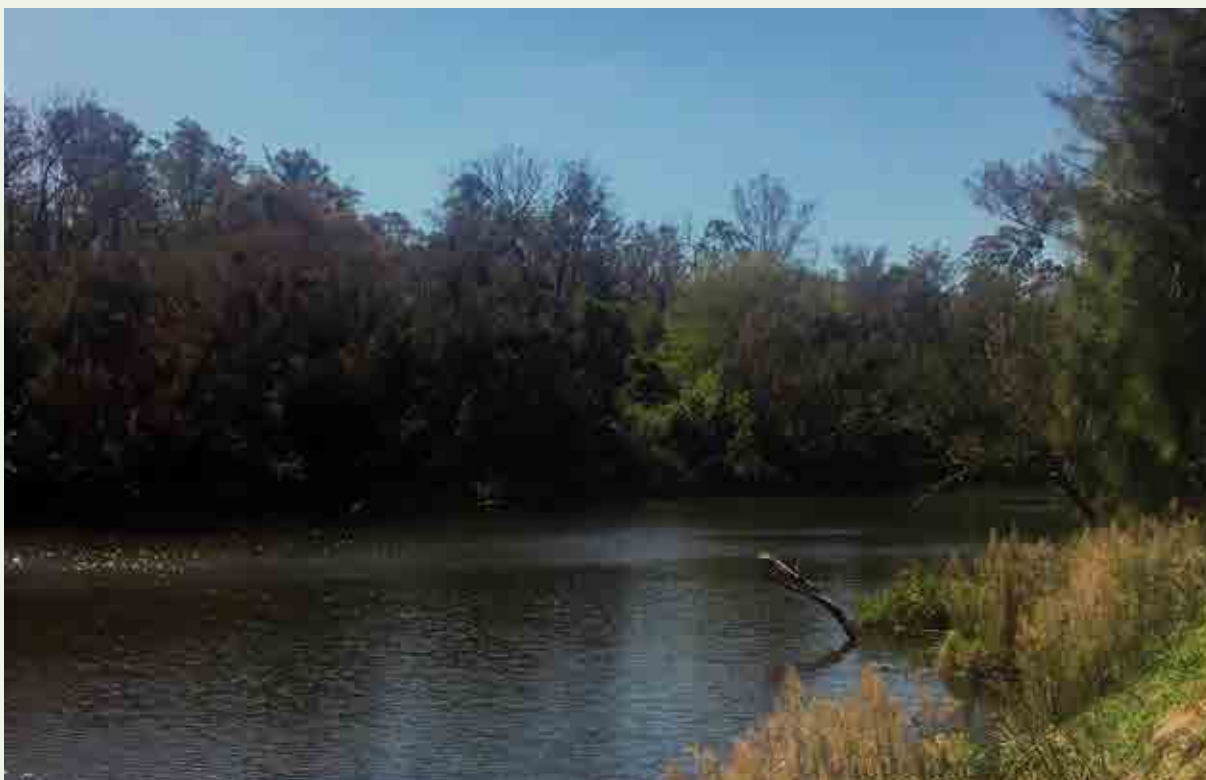
With Nepean River to the west and Georges River to the east, waterways are an integral part of the green infrastructure that supports the vision of Greater Macarthur. Urban development has the potential to affect the Hawkesbury-Nepean River. The NSW Water Quality Objectives identify the high-level goals for several catchments. In addition, the Department is preparing a bushland and waterways manual, as part of a green infrastructure policy framework, to help guide the management of waterways.

Greater Macarthur's waterways are protected through the *Water Management Act 2000* and relevant local environmental plans. The *2017 Metropolitan Water Plan* outlines the measures that will help provide Greater Sydney and Greater Macarthur with enough water to meet community

needs. The NSW Government is implementing this plan and will continue to review options to secure a sustainable supply of water.

Flooding presents significant natural hazards across parts of Greater Macarthur. This hazard is addressed through State guidelines including the *Floodplain Development Manual 2005*. The Hawkesbury-Nepean Valley has a high flood risk and climate change may increase the severity and frequency of floods in future. *Resilient Valley, Resilient Communities – Hawkesbury-Nepean Valley Flood Risk Management Strategy 2017* aims to reduce the potential risk to life, the economy and communities.

The water quality required will need to align with the *National Water Quality Management Strategy* which is reflected in the risk-based framework for considering waterway health outcomes in strategic planning decisions. This risk-based framework is identified as a key approach to achieving healthy waterways in both the *Greater Sydney Region Plan* and the *Western City District Plan*.



## Waterway health

Mapping of the biodiversity and ecological values of the waterways and riparian corridors points to areas of high environmental value, which lie within lands that could potentially be protected under current statutory planning controls. To ensure that these high value areas are protected into the future, a more coordinated and integrated study into land use and water infrastructure planning will be undertaken at the precinct planning stage for the land release precincts.

Stormwater and wastewater flows from the Growth Area have the potential to change the natural water and nutrient cycles, which for example, can impact on the fauna and also lead to growth of weeds. The NSW Environment Protection Authority (EPA) and the OEHL have established that any water quantity and water quality strategy for the Growth Area must seek to improve the health of waterways and associated riparian corridors through a risk-based approach, with a minimum requirement of maintaining current health.

The key aim for waterways as documented in the *Western City District Plan* is to prioritise the waterways as green infrastructure. This involves:

- reconceptualising waterways as an infrastructure asset that can provide environmental, social and economic benefits to communities
- integrating approaches to protecting environmentally sensitive waterways within
- a larger network of green infrastructure
- addressing the cumulative impacts of development and land management decisions across catchments in a way that improves water quality and waterway health.

The EPA is also currently developing a framework for the regulation of sewage treatment plant nutrient discharges in the Hawkesbury-Nepean River system. The intent of this framework is to ensure that population growth in the catchment does not cause further deterioration in the condition of the river and its ability to meet the community's desired values. In the interim, infrastructure planning for the Growth Area should be delivering an outcome that ensures any new or amplified sewage treatment systems will achieve no net increase in nutrient load to the river.

Achieving the level of protection required for the Growth Area will involve more water sensitive, integrated and sustainable approaches to water management. Such approaches present opportunities for innovation and co-benefits that align with the Greater Sydney Commission's objectives around urban cooling, open space, and recreation and visual amenity.

## Now

The land release precincts are located within the catchments of the Nepean River and Georges River, which form the east and west boundaries respectively. Previous community engagement on water quality for the Hawkesbury-Nepean resulted in the development of several water quality objectives for the river catchments, including:

- protection of aquatic ecosystems
- access to waterways for recreation
- visual amenity.

Many minor watercourses in the area have been subject to agricultural pressures including clearing of riparian vegetation, unrestricted stock access and the construction of on-line farm dams.

Higher order watercourses, such as Menangle Creek and Mallaty Creek, are relatively undisturbed and in good condition. These riparian corridors represent areas of high environmental value.

The Upper Canal, which provides water to Sydney from the four Upper Nepean dams, crosses through the land release precincts.

While urban development will reduce pollutants from agricultural uses, it could increase stormwater runoff into the river catchments. Appropriate measures will be required to manage stormwater flows and to achieve the community's water quality objectives for the Nepean and Georges Rivers.

Water sensitive urban design measures could integrate stormwater management into the landscape and provide additional public open space and recreational and visual amenity.

## Flooding

The overland flow path associated with the 1 in 100 chance per year flood event (see Figure 7) is largely limited within the watercourse gorges given they are generally deep. The probable maximum flood has been considered in establishing urban capability.

Land adjoining the Nepean River to the north of Douglas Park is relatively flat, resulting in overland flooding. The extent of the land affected by the 1 in 100 chance per year flood extent is illustrated in Figure 7.

The NSW Flood Prone Land Policy aims to reduce the impact of flooding and flood liability on individual owners and occupants of flood prone properties and reduce public and private losses resulting from floods.

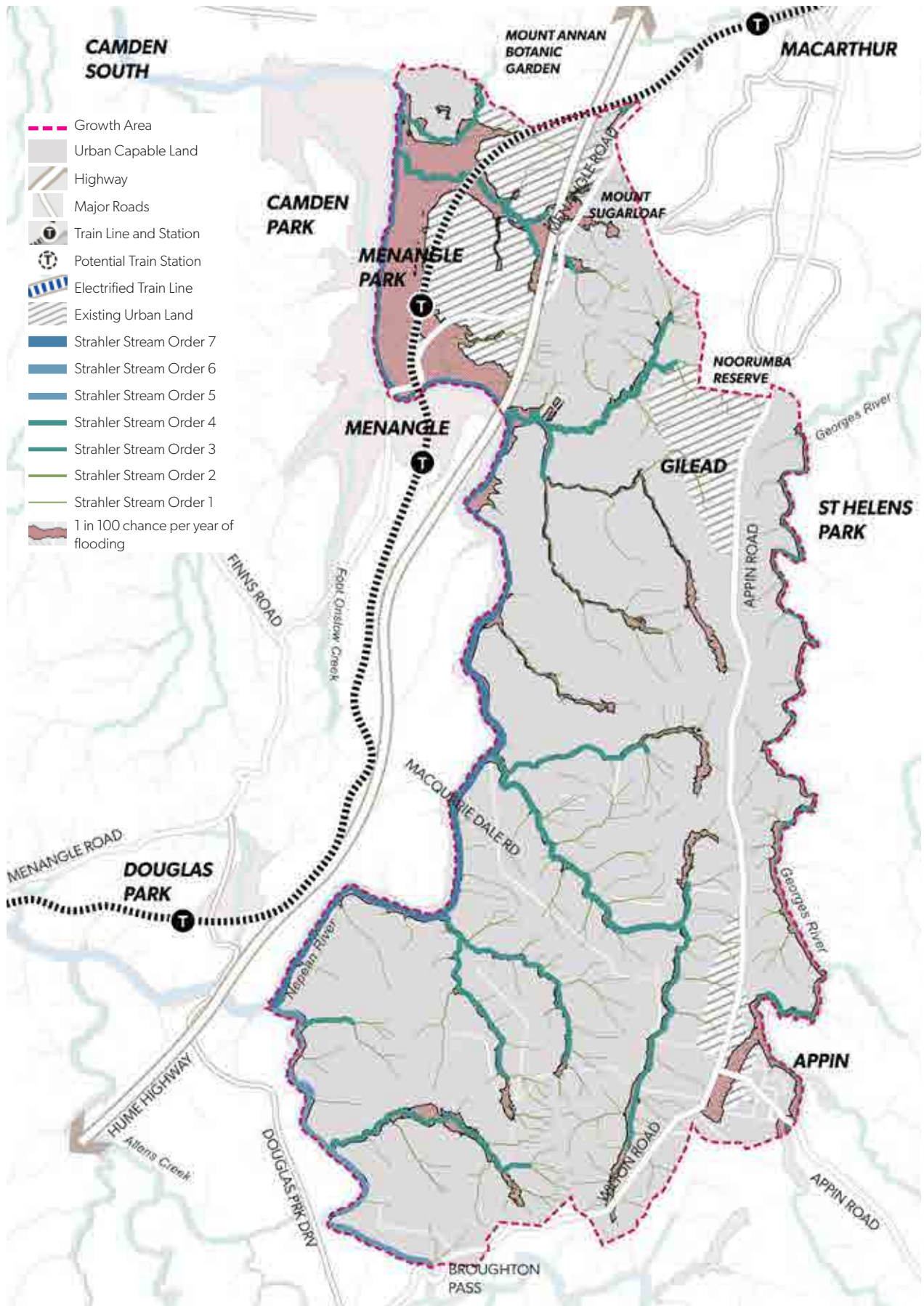
No urban development may occur in land identified as constrained by the 1 in 100 chance per year flood. Assessment of the probable maximum flood will be catchment based.

## Planning principles

Precinct planning must:

- **incorporate development that protects, maintains or restores waterway health** along with the community's environmental values and uses of waterways through a risk-based approach to manage the cumulative impacts of developments
- **ensure an integrated approach to drinking water, wastewater, and stormwater services** is considered to drive more sustainable water management outcomes
- **incorporate development that fosters the relationship between water, landscapes and urban living**, to enhance human and social wellbeing, and promote community co-design and governance in urban water strategies
- **assess flood risks** and impacts at a precinct level to determine an appropriate development footprint and flood planning considerations to ensure that there is no negative impact on adjoining lands or riparian corridors
- **include a flood evacuation strategy** that meets the requirements of State emergency providers
- **locate critical infrastructure** such as health facilities, retirement villages, child care centres and schools outside the Probable Maximum Flood extent to address evacuation issues and flood risk
- **avoid any filling of flood plains**, particularly those plains below the 1 in 100 chance per year flood.

Figure 7: Water management



## Bushfire

### Objectives

The key objective is to plan, design and develop bushfire resilient communities across the Growth Area.

The potential urban footprint of land release precincts will be influenced by bushfire risks. Despite risks to some areas, the Growth Area can accommodate urban development provided the appropriate *Planning for Bushfire Protection (PBP)* measures are implemented.

Future development within the Greater Macarthur urban renewal corridor will generally involve redevelopment within existing development footprints (e.g. densification of existing urban land and change from industrial to urban and/or commercial). There will therefore be little to no change to the bushfire threat that future development is exposed to.

Assessment of the adequate provision of bushfire protection measures will be required at precinct planning stage and subsequent development application stages as outlined in Figure 8.

The Bushfire Protection Measures specified in Draft PBP 2018 will be appropriately implemented, and no burden will be placed on surrounding landholders for bushfire mitigation activities as a result of development under *Greater Macarthur 2040*.

### Now

Bushfires are a significant natural hazard across many areas of Greater Macarthur. Climate change is likely to result in a longer bushfire season with more bushfires, and longer lasting heatwaves with more extremely hot days. This is addressed through State guidelines including *Draft Planning for Bush Fire Protection 2018*.

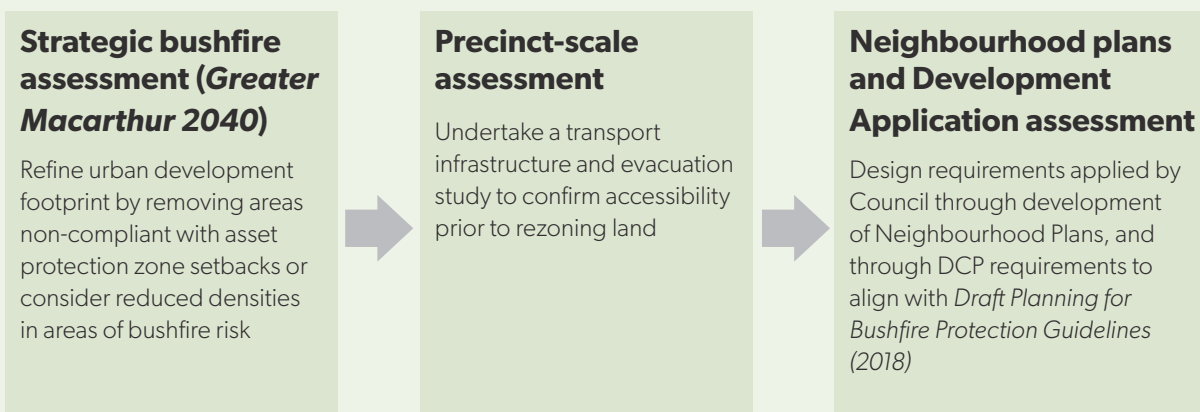
The Department has prepared a strategic bushfire assessment for the Growth Area.

### Planning principles

Precinct planning must:

- **comply with the provisions of *Planning for Bush Fire Protection 2018* (PBP)**, and address compliance through a bushfire assessment report
- **be referred to the NSW Rural Fire Service** for comment
- **locate asset protection zones** for bushfire protection purposes should be wholly within suitable land for new development, not within high biodiversity constrained land
- **include evaluation** of evacuation and access.

**Figure 8:** Greater Macarthur Growth Area bushfire assessment framework



## Waste

### Objectives

The NSW Government has a clear waste and resource recovery agenda. These include:

- *Waste Avoidance and Resource Recovery (WARR) Strategy 2014–21* sets targets for diverting waste away from landfill and increasing recycling rates
- a new container deposit scheme called 'Return and Earn' which allows people to return beverage containers in exchange for 10 cents per container
- a \$337 Waste Less, Recycle More (2017-2021) initiative aimed at investing in the waste and resource recovery sector
- a Draft Circular Economy Policy Statement that aims to move the NSW economy away from the linear system of 'take, make, dispose' to a circular economy where waste is avoided, products are re-used or repaired, and recycling is more prevalent.

### Now

In Greater Sydney, by 2021 there will be a deficit of 558,000 tonnes capacity for treatment of mixed waste and 128,000 tonnes for processing packaging waste. With growing population there will be a need for more waste and recycling facilities and approaches that promote re-use and recycling initiatives. *A Metropolis of Three Cities* recognises the provision of waste management as an essential service to communities.

### Planning principles

Precinct planning must:

- **provide for sustainable** design and waste management
- **ensure that local resource recovery and waste management** is supported by the road hierarchy and urban services zones
- **include waste management** in local development controls
- **integrate** technology that contributes to and promotes achievement of the NSW Government's target of net-zero carbon emissions by 2050
- **introduce** opportunities for sustainable and efficient use of resources to minimise waste, water and energy from development.





## Air quality

### Objectives

Appropriate management of air quality is essential to ensure the health of communities. Mitigation strategies can minimise exposure and health impacts on communities and the related cost to the public health system. Measures include appropriate setbacks from sources of exposure, or mechanical ventilation where adequate setbacks cannot be achieved.

### Now

Air pollution, particularly fine particle pollution, has major public health impacts and economic costs for communities. While all parts of Sydney are exposed, the north west, west and south west of the city often experience higher levels of pollution.

Future development and population growth in Western Sydney could increase exposures to air pollution. The Department, the Office of Environment and Heritage and the Environmental Protection Agency are identifying ways to minimise air pollution through the planning process.

Home wood heaters are the most significant air emission source for Western Sydney, with each wood heater generating the equivalent particle emissions of three and half trucks each year. While legislative changes aim to promote low emission wood heaters in homes, new residences should not include wood heaters, especially as alternative heating options are available. Bushfires and hazard reduction burns also contribute to emissions.

Emissions from traffic remain a concern, especially for residential and other sensitive land uses, such as child care centres and schools, along road corridors where pollution levels are higher. Setbacks from busy road corridors or the provision of high performance mechanical ventilation can minimise air quality impacts to new residents.

Non-road diesel equipment, such as construction equipment and locomotives, also contribute to emissions.

### Planning principles

Precinct planning must:

- **set back residential and other sensitive uses**, such as child care centres and schools away from existing and likely future sources of air pollution, such as busy roads, with Annual Average Daily Traffic (AADT) flows, or likely AADT of above 20,000 movements and rail corridors. The Department will identify required setbacks after transport modelling is completed at precinct planning stage
- **incorporate setbacks** to minimise exposure and odours from agricultural uses
- **limit community exposure to air pollution** through development controls relating to areas such as wood fire heaters or energy efficient building design
- **minimise private vehicle use** by promoting active transport opportunities and access to local services and employment
- **utilise best practice** emissions controls to minimise air pollution from industrial and commercial uses
- **include provisions** in development control plans to reduce diesel and other polluting emissions from construction activity
- **incorporate Green Plans** to achieve urban canopies to contribute to local air quality.



# BUILT FORM

**Urban design, density, height, massing and architectural design influence the built environment. As the south of the Growth Area transforms from rural to urban uses, the built form will influence the physical character of new places. In the urban renewal corridor, the built form must enrich the area's existing character.**

The Greater Macarthur Growth Area will offer a mix of residential, commercial and industrial uses, with urban centres located along existing railway stations and a new transport corridor. It will be supported by public transport, health services and other public facilities.

## Built form

### Objectives

The *Western City District Plan* identifies the Western City as Greater Sydney's urban parkland, where urban lifestyles meet rural living and residents enjoy the best of both worlds. Meeting this objective will be influenced by the arrangement of streets, open spaces, community facilities, schools and centres. Each precinct in the Growth Area must involve an integrated and collaborative process, pulling together the expertise and knowledge of specialists working in built environments.

*Better Placed* is an integrated design policy approach for the built environment of NSW that will inform the built form in Greater Macarthur with a focus on open space, walkability and sense of community. *Better Placed* is a placed-based approach that is relevant to and resonates with local character, heritage and communal aspirations. It creates an approach for good design to shape infrastructure, architecture, public places and landscape.

Each of the Growth Area's 12 precincts has a distinct character and development capability that is reflective of each precinct's locational attributes, existing context and communal aspirations.

The built form in the Growth Area's north will be derived from its location, context and social setting. At its heart, the built form will respect existing character with a focus on open space, expanded and improved social facilities and preservation of heritage items.

The land release areas in the south require a landscape approach that respects and builds off environmental corridors, and recognises and preserves the existing heritage in the landscape.

The precincts along the rail corridor from Glenfield to Macarthur will provide medium to high density homes and jobs. A range of building heights will be introduced through precinct planning from medium to higher rise to provide for a maturing Campbelltown-Macarthur. *Greater Macarthur 2040* offers opportunities for open spaces and social facilities, and protection for key heritage items.

New land release areas will transform into neighbourhoods with a range of low to medium density homes that cater for all life stages and employment opportunities that allow local residents to work near home. *Greater Macarthur 2040* recognises key environmental corridors and local heritage items, while providing homes, jobs and social facilities.

## Now

The Glenfield to Macarthur corridor contains a mixture of housing, predominantly detached on larger lots. The land release precincts comprise a predominantly rural setting.

## Planning principles

Precinct planning must:

- **adopt the objectives** from the office of Government Architect NSW's *Better Placed*
- **plan for diverse typologies** to suit a range of ages
- **a place-based approach** to precinct development derived from its location, context and social setting
- **design for people** with a focus on safety, comfort and the basic requirement of using public space
- **create welcoming and aesthetically pleasing places** where people use and enjoy local places, with a visual environment that fits with its surroundings and promotes positive engagement.
- **a focus on environmental sustainability** and responsiveness to meet the needs of local residents and workers.



Desired future character for the Campbelltown precinct





# LAND USE

**The Growth Area varies the north's lower density residential areas to the Metropolitan Centre of Campbelltown-Macarthur and large format light industry, warehousing and logistics centres in Ingleburn and Minto, to predominantly rural uses in the south, including former poultry enterprises and extractive industry. Menangle and Appin are rural villages, with Appin home to smaller-scale residential development.**

## Housing

### Objectives

A *Metropolis of Three Cities* sets a District 20-year strategic housing target of 184,500 dwellings, equating to an average annual supply of 9,225 dwellings over 20 years, or approximately one in four of all new homes in Greater Sydney over the next 20 years.

New housing will be delivered in stages, following rezoning of precincts as outlined in Table 1. The first new homes are expected to be built in the Menangle Park and Gilead land release precincts by 2019. New housing will be supported by walking and cycling links to enhance connectivity in the area.

In the longer term, West Appin also has the potential to be rezoned for housing. While current forecasts suggest not all the Growth Area will be required before 2036, regular reviews of this plan will monitor take-up rates, demand and infrastructure servicing.

From Glenfield to Macarthur, around 45% of housing will be multi-unit homes by 2036 to provide more housing choice. This is a shift for an area where currently 94% of homes are detached, lower-density homes.

Medium density housing, greater than 25 dwellings per hectare including smaller lots, terraces, medium density and multi-storey development, would be located where feasible along a highly accessible transport corridor connecting Campbelltown-Macarthur, Gilead, Appin and Douglas Park. Neighbourhoods further from the transport corridor would have lower densities as shown on the structure plan. Detached housing on small to medium sized lots (350–700m<sup>2</sup>) is expected to make up the majority of housing to meet the demand not supplied in the South West Growth Area.

Demand for smaller lots, semi-detached homes, townhouses and low rise apartments is expected to grow over time as the precincts become established.

Scenic Hills to the north of the Gilead land release are not suitable for housing and will be zoned accordingly in precinct plans to preserve the character of this area.

### **Housing and typologies**

A mix of densities and housing types will provide housing choice. Detached housing on medium sized lots (400–700m<sup>2</sup>) is expected to make up the majority of homes in land release precincts.

Medium density housing types such as townhouses, terraces and low-rise apartments will be delivered close to essential infrastructure such as public transport, town and local centres, and open space. It is expected that these housing typologies will make up approximately 20% of homes when the Growth Area is fully developed.

Planning for the right mix of densities will consider infrastructure provision and local character. The built form of housing typologies need to work with the existing natural landscape character and allow for the outcomes of the Green Plan to be achieved. Density bands are outlined in Table 2.

### **Affordable housing**

Provision of affordable housing is an important issue for key workers such as teachers, firefighters, health care and social workers. Housing needs will continue to be assessed to avoid key workers needing to commute long distances from outside the area to their work.

In the precinct planning phase, consideration will be given to affordable housing targets in line with the 5% to 10% floor space goal in the District Plan. This work will be informed by a feasibility analysis and may involve a commercial arrangement with developers.

In order to address housing affordability and housing diversity needs, minimum lot sizes will be designed to encourage innovative housing solutions as part of precinct planning. This is to ensure a variety of housing typologies and products are provided to safeguard adaptable and fit for purpose housing for a growing and evolving community.

The District Plan proposes that affordable rental housing be provided sustainably in all parts of Sydney. Councils can require developers to provide a proportion of homes to community housing providers for affordable rental housing. The Department will work with councils and landowners to identify how this requirement would be applied in practice.



**Table 1:** Development potential of precincts

Precinct	Potential new homes
Glenfield	7,000
Macquarie Fields	300
Ingleburn	1,000
Minto	350
Leumeah	1,000
Campbelltown	3,600
Macarthur	4,650
Menangle Park	4,000
Gilead	15,000
North Appin	5,000
West Appin	15,000

The yield for the Growth Area has been determined based on initial assessment of suitable locations for higher, medium and low density development. Precinct planning will allow the yield and capacity to be refined. The transport network is designed to support around 40,000 dwellings in the land release precincts based on current assumptions around the provision of traditional transport – road-based, heavy rail and intermediate and local public transport. If emerging technology produces improved public transport outcomes then a higher yield could be considered in the Growth Area. *Greater Macarthur 2040* will be periodically reviewed to take stock of development and reassess infrastructure, including transport capacities.

**Glenfield** will become a vibrant local centre and transport interchange with the relocation of the Hurlstone Agricultural High School. Glenfield has the potential for 7,000 new homes in high, medium and low rise residential development. In addition, land will be set aside for employment uses.

**Macquarie Fields** will develop as a local village centre. A range of building heights will be provided with increased heights closer to the station. Macquarie Fields has potential for 300 new dwellings.

**Ingleburn** will be a vibrant town centre with a stronger village character. It will accommodate 1,000 new dwellings in new multi-storey buildings.

**Minto** will be an important employment centre and evolve to meet the local community's retail needs. It has potential for 350 new dwellings.

**Leumeah** will be the gateway to Campbelltown-Macarthur, offering sport and recreation for South West Sydney. It has the potential for 1,000 new dwellings.

**Campbelltown** will offer higher-order civic, cultural, employment, residential and retail opportunities. It will include 3,600 additional dwellings with an activated commercial and retail core.

**Macarthur** will complement Campbelltown with world-class health facilities, integrated educational institutions, more diverse housing, a premier retail precinct and attractive public spaces. It can accommodate around 4,650 new dwellings.

**Glenlee** will be an industrial precinct supported by upgraded road connections.

**Menangle Park** will become a new urban community with a town centre providing local retail and commercial services. Around 4,000 homes could be built in Menangle Park.

**Gilead** could provide around 15,000 homes within a scenic landscape. Conservation of biodiversity corridors and waterways will provide high amenity for future residents. A central transport corridor will connect Campbelltown-Macarthur and the rail network. This spine would provide further connection to Appin and Douglas Park, where higher density housing, employment and services will be located.

**North Appin** will provide opportunities for around 5,000 new dwellings separated from Gilead and West Appin by green corridors.

**West Appin** has the potential to provide around 15,000 homes in the longer term.

## Now

Within the Growth Area in 2016, around 76,000 people lived in the suburbs between Glenfield and Macarthur. Approximately 3,000 people lived in the area from Menangle Park to Appin.

The Glenfield to Macarthur Corridor has the following population statistics:

- a median age of 34, two years younger than that of Greater Sydney
- three quarters of households are families, similar to Greater Sydney
- lower weekly median household income of \$1,495 than Greater Sydney's \$1,750
- lower home ownership than Greater Sydney (23% compared to 29%) but a higher proportion of homes with a mortgage (36% compared to 33%)
- housing costs take up 31% of household income, similar to Greater Sydney mainly detached houses.

In the Menangle Park, Gilead and Appin precincts, the population has:

- a median age of 47, significantly higher than Greater Sydney at 36 years
- 74% of households are families, consistent with Greater Sydney
- lower weekly median household income of \$1,449 than Greater Sydney at \$1,750
- home ownership was consistent with Greater Sydney at 29%
- a significantly higher proportion of homes have a mortgage as compared to Greater Sydney (49% against 33%)
- housing costs take up 22% of household income, lower than Greater Sydney
- a high proportion of detached houses (84% of all dwellings).

There is some existing development activity, with the combined dwelling completions in 2015–16 for Greater Macarthur and Wilton at 728 new dwellings.

Anticipated change will create demand for more compact housing that is better connected to transport and amenities. New housing will be required to respond to an ageing population and smaller household sizes and continued pressure on affordability.

In response, this plan proposes a two-pronged approach by enabling urban renewal and land release development.



## Density

Greater Macarthur will be home to a variety of housing types to cater a diverse community. Precinct plans should:

- **identify zones for medium and lower density** housing
- **locate medium density housing in close** to services, shops and the transport corridor
- **integrate adequate open space** is integrated with housing.

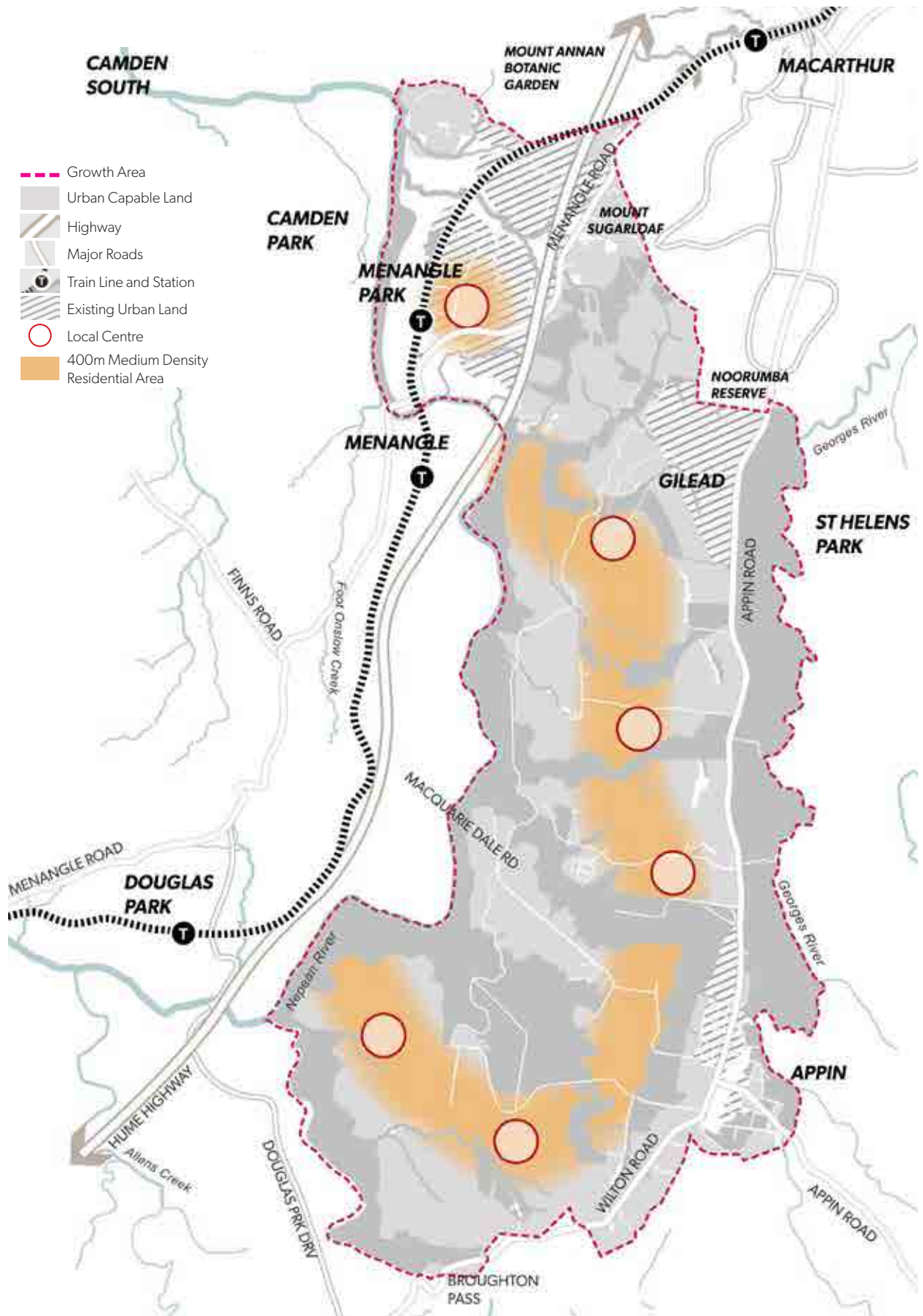
**Table 2:** Density bands

Zone	Minimum density dw/ha	Maximum density dw/ha
R1/R2	15	25
R3	25	45





Figure 9: Indicative density distribution



## Local economy

### Objectives

The *Greater Sydney Region Plan* and *Western Sydney District Plan* focus on the potential of the planned Western Sydney Airport to support the development of a Western Parkland City that, along with an emerging Central River City focused on Parramatta and the existing Eastern Harbour City focused on Sydney CBD, would transition Greater Sydney to a metropolis of three cities. These plans acknowledge the growth potential of the wider Western Sydney area, including the Greater Macarthur Growth Area.

The Glenfield to Macarthur corridor could be home to an additional 21,000 jobs over 20 years. These would be provided in expanded employment lands and through knowledge jobs in education and health.

Job opportunities in land release precincts will include those provided by commercial, retail and employment lands. New employment areas will include the Glenlee Precinct. The Department will work with councils to develop economic development initiatives that will attract business to the area and support job creation. This plan targets an additional 20,000 jobs within or accessible to the release areas. Land south of Menangle Park may be suitable for employment in logistics and warehousing as it is located at the proposed junction of the Hume Motorway as shown on the structure plan.

A dedicated enterprise area with good motorway access has the potential to deliver a critical mass of economic activity. The proximity of the land to the Growth Area, when connected by new east west links, could provide a source of employment. The Department will investigate the inclusion of the land in the Growth Area.

Land use in Macquariedale Road is identified as a mixture of residential and employment land.

A new east-west link road through Appin is to be designed after the route for the Outer Sydney Orbital extension to the Illawarra is defined. The mix of land use in this area will be influenced by the road hierarchy confirmed after this extension is planned. Connectivity may bring opportunities for an enterprise corridor with potential residential development where amenity and public transport is accessible.

Jobs will be created across a range of industries including retail, food services, education, trades and industrial jobs. Many of these jobs will be created to support the local population as it grows.

In addition, improved road and transport connections to Campbelltown-Macarthur and to the Western Sydney Employment Area will provide direct access to employment opportunities including the Western Sydney Airport.

The Department will continue to work with Campbelltown City Council and Wollondilly Shire Council to develop economic development actions to support job creation within the area, which includes new knowledge jobs around the education/health precinct at Campbelltown-Macarthur.

The structure plan proposes locations for local urban employment. These locations are suitable for employment-generating development such as retail and commercial space, offices, service and repair, trades, manufacturing, warehousing, freight and logistics. Community facilities, open space and infrastructure may also be located on this land. Each precinct will need to contain sufficient urban employment land to service the local population.

### Now

Urban land along the Glenfield to Macarthur corridor is typically lower density residential supported by retail employment and jobs in education and health. Employment areas including Ingleburn and Minto accommodate large format light industry, warehousing and logistics centres.

Land within the Menangle Park, Gilead, West Appin and North Appin land release precincts is predominantly rural with some former poultry enterprises and extractive industry.

Further consultation with landowners and agricultural industries is required to understand the intended land use and operation on their land in the long term. This will assist with staging of urban development and transition from remaining agricultural production. Any relocation will require identification of other suitable land beyond the Growth Area for continuing agriculture.

## Centres

### Objectives

*Greater Macarthur 2040* will guide the establishment and renewal of centres within the Growth Area. Campbelltown-Macarthur is to be reinforced as the primary centre for retail, commercial and services for the Growth Area. Growth in the southern land release precincts will expand the catchment for the centre and create additional demand for services. Investment as a result of this demand is expected to support the maturing of this centre.

Glenfield will grow based on its history providing educational institutions and superior location at the junction of three rail lines. With direct access to Sydney CBD, Parramatta, Liverpool and, in future, the Western Sydney Airport, Glenfield has the capacity to evolve into a strategic centre. A new health facility and potentially tertiary education facilities will provide a concentration of local jobs and demand for allied commercial space.

Ingleburn will retain a role as a thriving commercial centre with some government services and an attractive public domain. Additional housing in medium to higher rise buildings will create additional local demand investment.

Leumeah will be better connected to Campbelltown-Macarthur and will build on the sports facilities within the area. It will include a more diverse retail offering as additional housing is introduced to the precinct. The other local centres in the urban renewal corridor will be renewed and continue to service the local community.

The land release precincts will be serviced by conveniently located and well-designed local centres as well as smaller facilities within neighbourhoods. Wilton Growth Area to the south, will have a major centre with discount department stores and civic uses where future residents of southern parts of Greater Macarthur may choose to shop and do business.

Campbelltown-Macarthur will supply the needs of the Growth Area for major services and retail. Another metropolitan centre will not be required. However, there is potential for one of the local centres identified in the plan to evolve into a strategic centre. Menangle Park and Gilead are unlikely to require major centres given the proximity to Campbelltown-Macarthur. Appin, Appin North or South Gilead have potential to become strategic centres. This will be a function of the timing at which the centre is established, investment in transport connections and the centre's catchment.

Each centre will be influenced by the role and growth of other centres.

New local centres within the Growth Area will provide a mix of retail, business and community uses to serve the surrounding population, including:

- specialty shops
- cafés and food services
- offices and retail services
- education, health facilities, leisure and civic uses
- open space.



A network of centres will provide residents with convenient access to local shops and services to ensure centres remain viable. These centres will serve a local population and comprise in the order of:

- a small supermarket (1,500 to 2,500 m<sup>2</sup>)
- up to 2,000 m<sup>2</sup> of specialty shops, cafés and food services
- education and child care
- local health services
- recreational space and facilities.

Local centres will provide a range of services to the new community. One of the centres has the potential to be a larger strategic centre with supermarkets and discount department stores.

Metropolitan city services will continue to be provided by the Metropolitan Cluster of Campbelltown-Macarthur.

The planning and development of the local centres will be staged in line with population growth. Rezoning proposals should support the timely delivery of local centre uses to ensure they gain a foothold in the market and can gain momentum to achieve critical mass and maturity. This includes early infrastructure upgrades to support centre development and future capacity to further develop and grow to become a larger (strategic) centre.

Strategic retail modelling indicates that the population and retail catchment will support a number of local centres.

Any proposals for local centres other than those identified will need to be supported by a retail study that demonstrates why retail, commercial and community uses will not impact the viability or intended role of the planned centres.

The local centres will have a high quality public realm, based around open spaces and streets with high pedestrian comfort, seating and weather protection.

Parking areas and large format retail should be sleeved with specialty retail stores that create a more active street frontage.

If any local centre becomes a strategic centre, *Future Transport 2056* proposes that by 2036, all strategic centres have connected walking and cycling, to provide the community with more healthy transport choices and support access to public transport links.



## Planning principles

Precinct planning must:

- **protect the primacy of Campbelltown-Macarthur** in the commercial and retail hierarchy
- **consider the overall distribution of retail space** in the Growth Area to ensure convenient services in walking distance to denser neighbourhoods
- **provide urban service zones** in each precinct to meet local needs
- **establish a strong neighbourhood** structure focused on local centres and social hubs such as schools, with local facilities within easy access of homes to encourage walking and cycling
- **ensure neighbourhood retail and services** do not undermine the viability of the local centres
- **provide public realm and open space**
- **deliver transit-oriented development** and co-locate facilities and social infrastructure
- **provide, increase or improve** local infrastructure and open space
- **improve walking, cycling and public transport** connections, including through the Green Grid
- **protect or expand retail and/or commercial floor space**
- **protect or expand employment opportunities**
- **integrate and support arts** and creative enterprise and expression.

## Social infrastructure

### Objectives

The *Greater Sydney Region Plan* and the *Western City District Plan* recognise that as the population grows and demographics change the services and social infrastructure that are to be provided must also change to meet people's needs. Population projections show differences in projected growth in some age groups, while growth increases will place demand on existing services and infrastructure. Integrated and targeted planning will assist in determining the appropriate infrastructure to support population growth and establishing existing and future levels of usage.

Improvements to existing facilities, including a new Glenfield community centre, will be made to service growth in the urban renewal corridor.

In the land release precincts, a range of new or expanded facilities will be provided to service the future communities, including new community, health and sports facilities. Potential social infrastructure includes:

- two moderate district multipurpose community centres (500m<sup>2</sup> in Mount Gilead and 700m<sup>2</sup> in Menangle Park), one local community centre (120m<sup>2</sup> within a local centre) and, in the future, a facility in Appin
- library facilities
- cultural facility (500m<sup>2</sup> in Gilead)
- child care and out of school hours care
- indoor sports facilities
- indoor and outdoor aquatic/swimming facilities
- youth recreation facilities.

Facilities will be provided within easy access of communities. Large facilities that service a district are most appropriately located in the local centres. Neighbourhood level facilities that service a more local population can be located in local centres. Co-location or integration of facilities should be considered, where appropriate.

Potential social infrastructure identified for the Growth Area is shown in the Appendix. State-based facilities will be provided in accordance with population growth and demand thresholds over the next 20 years.

## Now

The Greater Macarthur Growth Area is serviced by regional health, education, cultural, sport and recreation infrastructure, as well as emergency services. These include local and district courts (Campbelltown, Camden, Liverpool), ambulance stations (Campbelltown, Camden), HJ Daley Central Library, Campbelltown Arts Centre and Camden Civic Centre.

At the local level, two child care centres, a non-government combined school, a museum and two sport and recreation facilities are located in Menangle Park. There a number of facilities close to the Gilead land release precinct in Rosemeadow. These include community and education facilities.

## Education

### Objectives

The *Greater Sydney Region Plan* encourages innovative approaches including more efficient use of land and shared use of facilities that will better connect local schools to their communities. The *Greater Sydney Region Plan* also encourages an innovative approach in planning for early education and child care facilities. *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* makes it easier for child care providers, schools, TAFEs and universities to build new facilities and improve existing facilities.

Additional primary, secondary and specific purpose schools may be required as the population increases. New government schools will be funded, built and operated where there is a demonstrated need for a new school in accordance with Department of Education (DoE) school assets strategic plans. In addition to the DoE school planning standards, spatial requirements for school planning must accommodate adequate provision for active and passive recreation, public transport and vehicular access, circulation set down/pickup and parking.

The NSW Government has endorsed cluster planning as the official NSW Government school planning methodology. This process enables the Department of Education to identify school projects necessary to meet increases in student population and improve school functionality. School projects can include upgrades of existing buildings, expansions of existing schools, total redevelopment of existing school sites, minor interventions (demountable and prefabricated modular buildings) to address spikes in population growth, and development of new schools in land release areas.

Identifying infrastructure requirements upfront enables service providers to better plan for the delivery of facilities as precincts are rezoned, including setting aside the necessary land to meet future needs.

State-based facilities will be provided in accordance with population growth and demand thresholds over the next 20 years. *Greater Macarthur 2040* identifies the following school infrastructure requirements:

- new primary schools and high schools in land release precincts with additional teachers and associated infrastructure for some existing schools across the urban renewal corridor
- a new education precinct at Glenfield, retaining a selective high school, three upgraded schools for specific purposes and land reserved for a future primary school.

New schools and sports fields must follow an integrated design process to ensure that access, car parking and use of the facilities are shared. The location and design of the built form must be carefully considered, to allow for a reconfiguration of the school and sporting fields. The Government Architect NSW's *Design Guide for Schools*, will guide quality design for new schools in the Growth Area.

## Now

The Greater Macarthur Growth Area is serviced by a number schools and child care facilities. The land release precincts have fewer schools, reflecting the smaller and dispersed population.

Existing schools in the urban renewal corridor have varying enrollments and some have expanded in recent years as a result of increased enrollments.



## Health

### Objectives

The *Greater Sydney Region Plan* and the *Western City District Plan* identify integrated planning for health services as being vital in making it easier for people to access a comprehensive health system. Health facilities should be located within or directly adjacent to centres, and ideally co-located with supporting infrastructure.

The South-Western Sydney Local Health District is undertaking detailed planning of local health facility needs. Campbelltown Hospital will be significantly upgraded and provide access to the Macarthur population. Health infrastructure needs will be assessed as the population grows and in partnership with the South-Western Sydney Local Health District and Campbelltown and Wollondilly Council.

This plan identifies the need for additional integrated health hubs, community health centres, primary health care clinics, required in stages as each precinct develops.

### Now

Regional health facilities are provided by NSW Health through the SWSLHD. Health services include two public metropolitan hospitals, three community health centres and one youth health service. There is also a private hospital in Campbelltown.

Under Ambulance NSW's Sydney Ambulance Metropolitan Infrastructure Strategy, ambulance hubs are provided in major urban centres supported by a network of standby points. The closest ambulance hub to the Growth Area is proposed in Liverpool (around 35 kilometres away). The area is also serviced by ambulance stations at Campbelltown and Camden.





## Resource extraction

### Objectives

The *Greater Sydney Region Plan* identifies that the Western City District contains mineral resources, where commercial quantities of coal and coal seam gas are being extracted. The proximity of rural-residential development to agricultural, mining and extractive industries that generate odour, noise and other pollutants can be a source of conflict.

Rural industries need certainty, so their operations can continue without encroachment from incompatible land uses. At the same time, the protection of land for biodiversity offsets and the rehabilitation of exhausted resource extraction areas support the re-establishment of significant ecological communities in the Metropolitan Rural Area.

Coal mining in urban areas can create building and infrastructure damage because of subsidence and preventative measures add to building costs. The coexistence of coal mining and urban development will not only create potential conflicts but also be costly managing mining impacts including mine subsidence.

Noise, dust, vibration, heavy vehicle traffic and loss of visual amenity from quarry operations can present issues for nearby urban development, if not appropriately addressed.

Any rezoning on land subject to a mineral extraction lease or with an approval for mining will only occur once the risks associated with mine subsidence can be shown to be mitigated.

Urban development close to active quarry operations should include appropriate buffers and noise abatement measures to mitigate any negative impacts on both sensitive uses and continued quarry operations.

Longwall coal mining within the Growth Area has largely been completed. A section of the West Appin precinct adjoining Macquariedale Road is part of the approved Bulli Seam Operation for which South 32 holds the mining licence.

An exploration licence is also held over part of the Menangle Park and Gilead Precinct. Coal extraction in these precincts is unlikely to continue now that the Growth Area is declared. Extraction would only be permitted if zero subsidence mining techniques to prevent damage to buildings and infrastructure from subsidence are adopted. On the other hand, coal reserves west of the Growth Area which are in the Metropolitan Rural Area will be protected by limiting urban development in these areas. These reserves contain metallurgical coal and are not used for power generation. Figure 10 illustrates the areas to be preserved.

### Now

The Camden Gas Project has been producing natural coal seam gas since 2001 and currently supplies around 5% of NSW's gas needs. Although partly located within the Menangle Park and Gilead precincts, most of the gas project's operations are located outside the area. Figure 11 shows wells inside the Growth Area.

Resource extraction infrastructure located within the land release precincts comprises:

- 29 coal seam gas wells, of which 18 produce gas
- low pressure underground gas gathering lines
- Rosalind Park Gas Plant, which compresses and prepares extracted natural gas for distribution through the local natural gas network.

In addition to natural gas extraction, two sandstone quarries are located within or near the Growth Area, including the Menangle Quarry. The quarries extract and process sand and sandstone for construction purposes.

The Menangle operation also has development consent and an EPA Licence for resource recovery and recycling, where building and demolition waste (concrete and bricks) are received and processed to produce a range of recycled aggregate and roadbase products.

A portion of the land release precincts has approval for coal mining over the next 15 to 30 years.

Figure 10: Current and planned mining

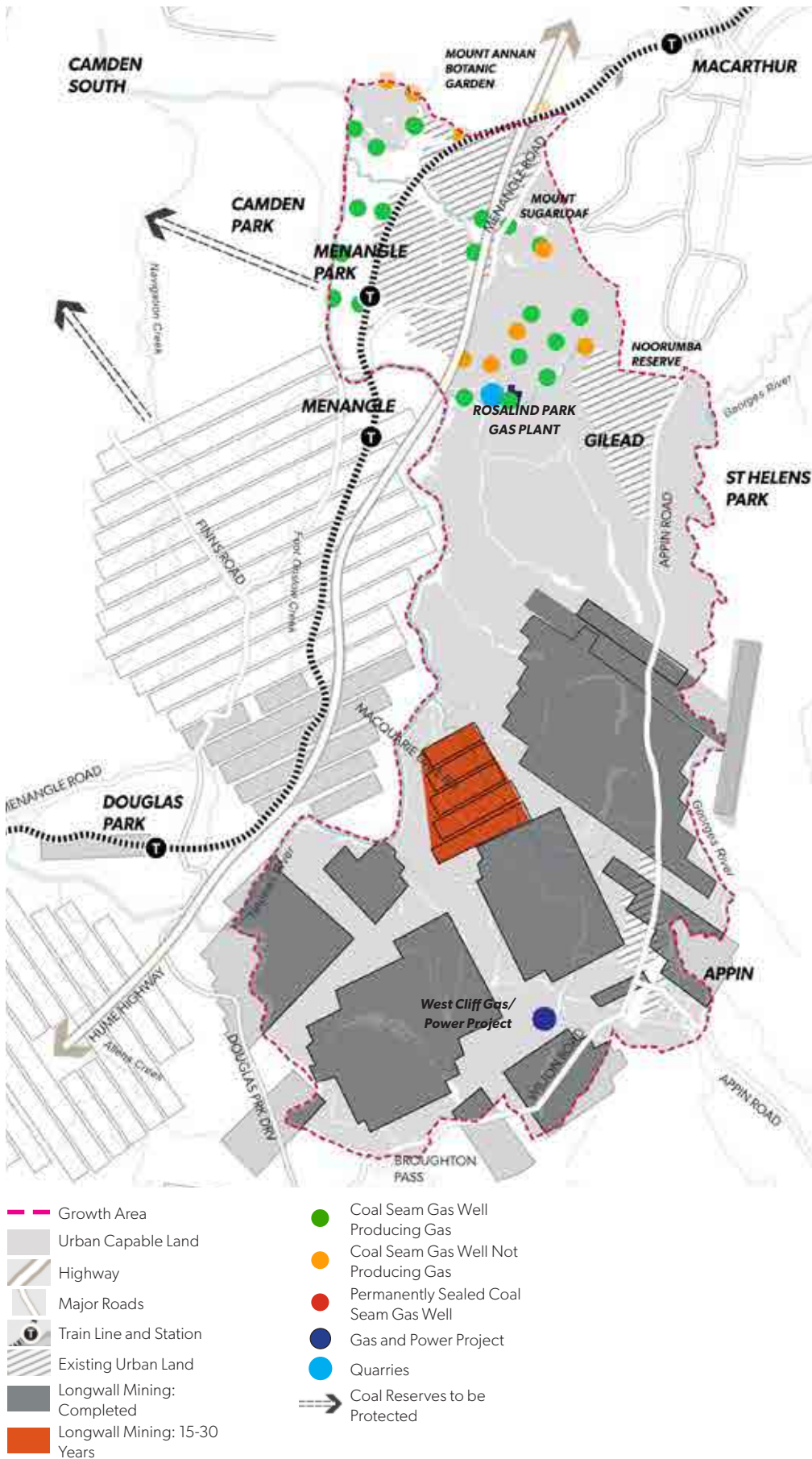
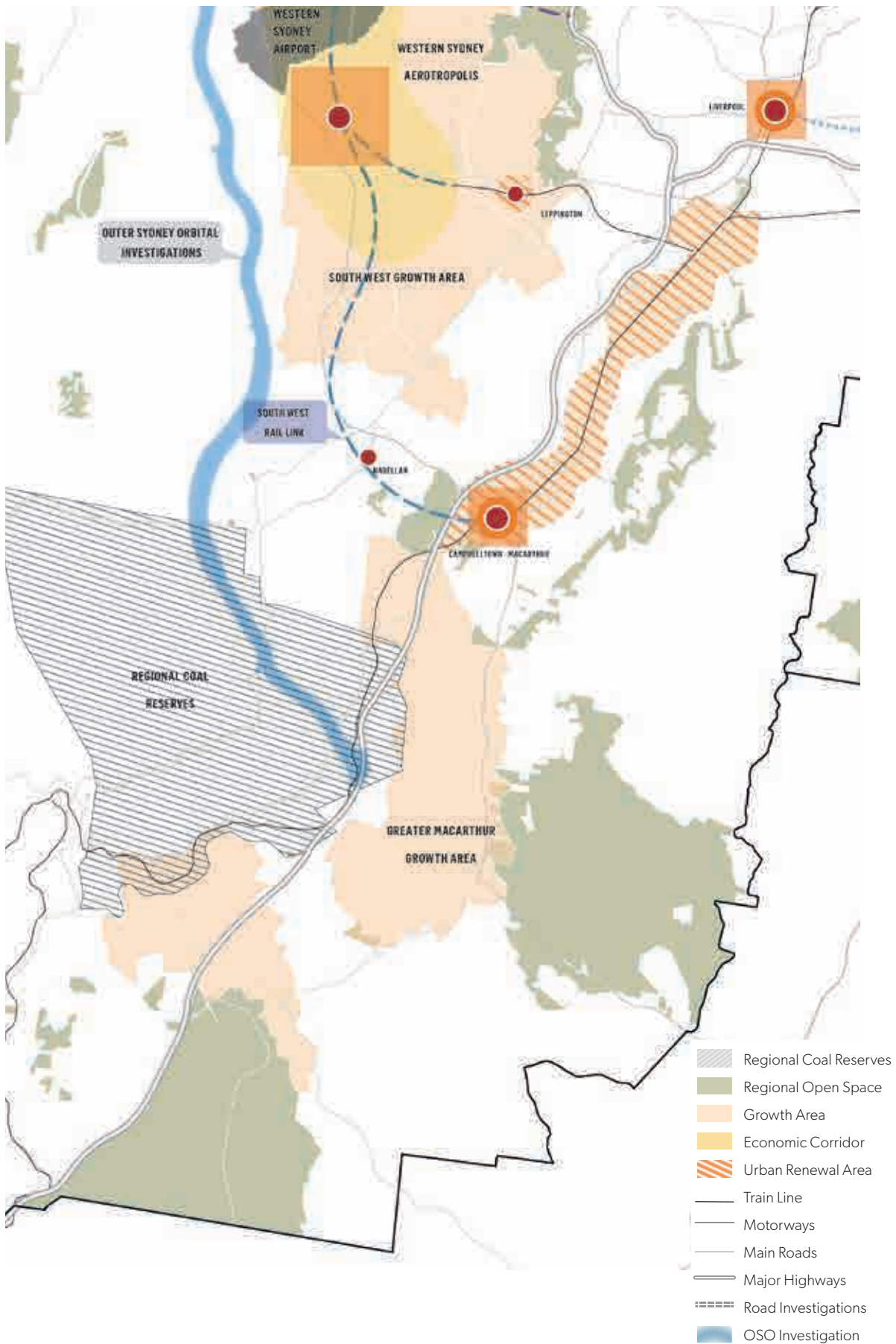


Figure 11: Coal reserves



## Planning principles

Precinct planning must:

- **avoid rezoning land where** extraction is to occur within 15 years.
- **protect future residents** from risks relating to the transitional closure of coal seam gas operations by:
  1. obtaining relevant information including maps to identify any coal seam gas wells and their status
  2. not constructing buildings over coal seam gas wells
  3. maintaining access to coal seam gas wells
  4. incorporating set backs to avoid the location of sensitive uses such as child care centres and schools near coal seam gas wells
  5. ground-truthing the existence of coal seam gas wells and confirming of adequacy of sealing to appropriate standards at subdivision.
  6. protecting regional coal reserves from urban development.



## Agriculture

### Objectives

Consultation with landowners and agricultural industries is required to understand the intended land use and operation on their land in the long term. This will assist with staging of urban development and any transition of remaining agricultural production. Any relocation will require identification of other suitable land beyond the Growth Area for continuing agriculture.

### Now

The prevailing land use within the land release precincts is grazing, including improved and irrigated pastures. The main rural industries of the Metropolitan Rural Area are intensive agricultural production on relatively small land parcels and resource extraction.

The 2012 Land and Soil Capability Assessment Scheme facilitates the assessment of land and soils for soil based agriculture uses. Class 1 and Class 2 land are the highest value agriculture lands as they can be used for intensive vegetable production/ horticulture but may also be flood prone. In metro areas the highest value agricultural uses typically occur on Class 3–5 lands, particularly poultry and polyhouses, dairy and specialist market gardening.

There are several pockets of Class 2 land in the land release precincts of the Growth Area but they are not being used for higher value activities. This reflects the shift away from agricultural production in the area.

This land is not part of the Metropolitan Rural Area or required for food and fibre production.

There is a significant cluster of poultry sheds south of the Gilead Precinct. Odours and noise from agricultural operations such as poultry farming can impact on nearby urban development if not appropriately addressed. Agricultural operations on the Inghams property in North Appin have ceased.

### Planning principles

Precinct planning must:

- **minimise land use conflict and provide** a transition through consultation with landowners and agricultural industries during planning, including agreement on the intended land use and operation, lifespan of operation and any measures to minimise the potential for land use conflict from continuing agricultural uses (this may include staging of urban development)
- **assess amenity impacts** through measures such as odour from continuing agricultural uses to identify measures
- **overcome adverse impacts**, through measures such as buffer zones, relocation of uses, sequencing of land release and replacement of lost employment
- **consider opportunities** to retain rural uses for larger holdings containing Class 2 agricultural land and adjoining flood-free lands outside the primary developable areas.





# MOVEMENT

**Movement is fundamental to the evolution of Greater Macarthur. Ease of movement in the Growth Area will rely on a diverse and connected network of transportation options including, integrated public transport, safe and direct routes for walking and cycling, together with well-designed road networks.**

*Future Transport 2056* sets the strategic direction for transport in NSW over the next 40 years. It identified priorities for investigation with a focus on city-shaping corridors and major regional transport routes, supported by flexible or on-demand service offerings. City-serving and centre serving networks and cycling/walking are also targeted.

The northern part of the Growth Area is well served by rail and bus transport with a comprehensive road network outlined in Figure 12. Growth in the adjoining South West Growth Area has brought additional movement pressure to the region and required the upgrade and connection of east-west links including Narellan Road and Gregory Hills Drive.

Urban renewal along the existing train line from Glenfield to Macarthur provides an opportunity to improve and upgrade the current rail network to provide highly accessible and connected train stations for residents and communities.

People living in the land release precincts have a high dependency on private motor vehicles and any trips in the Growth Area will primarily be taken by road unless public transport alternatives are provided in the early stages of development.

The State road network includes Appin Road and Menangle Road which are mainly one lane in each direction. The Hume Motorway is a Federal route and a key north-south link. These will need to be upgraded to cope with additional demand, recognising new or upgraded roads in the koala movement corridor need to incorporate measures to protect koalas.

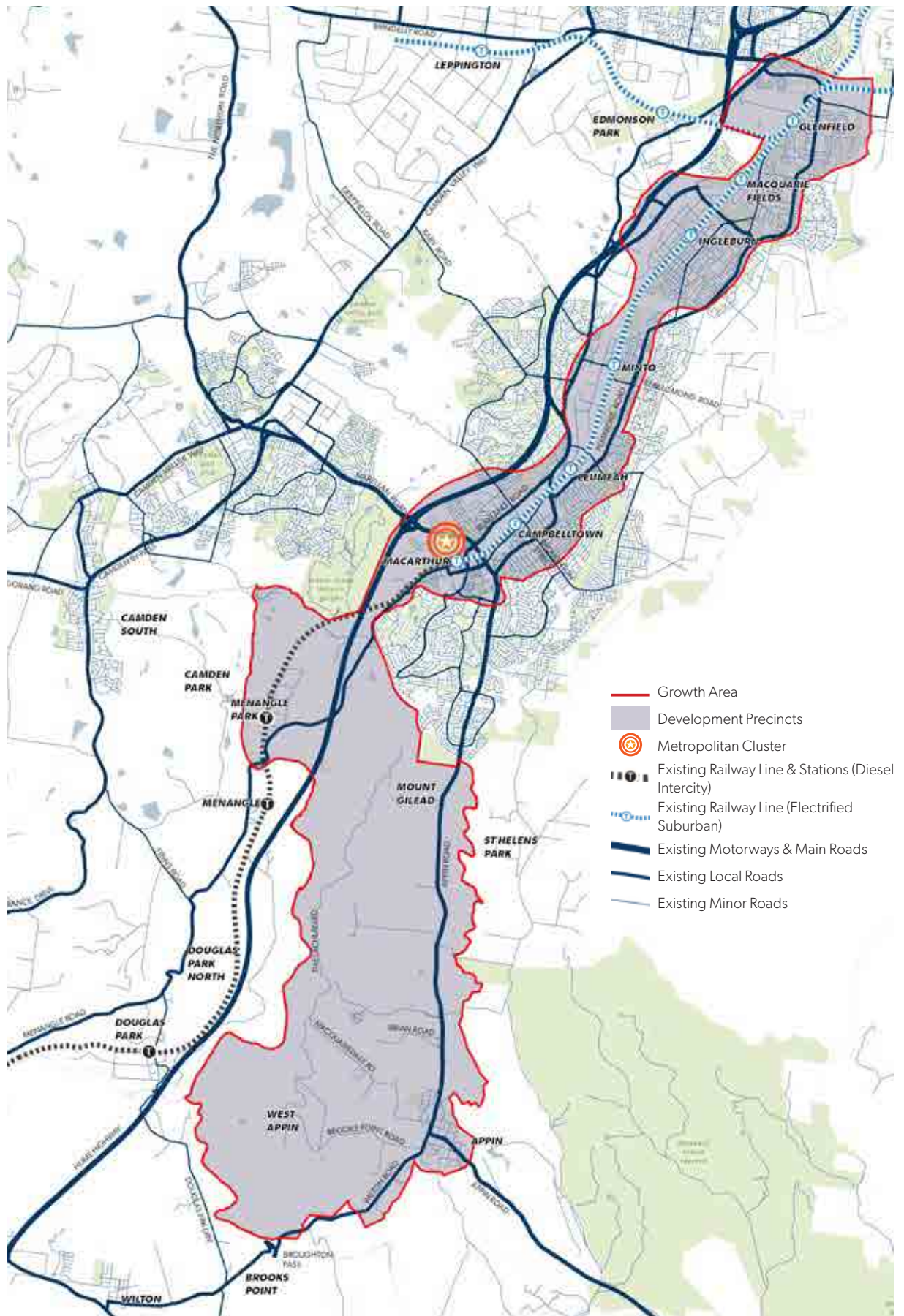
Key transport infrastructure requirements have been identified in consultation with Transport for NSW and Roads and Maritime Services. These requirements include regional-scale infrastructure that will benefit the entire Growth Area and its surrounding communities through major roads, and integrated public transport networks.

The final transport network will be funded through a combination of private sector investment and direct funding from the Australian and NSW Government and local government. This will include special infrastructure and local contributions and agency asset plans and capital budgets.

The proposed Special Infrastructure Contribution (SIC) schemes for the Growth Area will coordinate the on-time funding and delivery of regional infrastructure. The necessary infrastructure to enable the development of the land release precincts will be partly funded through the development process.



Figure 12: Existing transport network



## Public transport

### Objectives

The *Greater Sydney Region Plan* aspires to a 30-minute city that connects people to jobs, businesses, schools and services, and supports the economic efficiency of trade gateways. *Future Transport 2056* aims to improve public transport so that 70% of people will live within 30-minutes of work, study and leisure opportunities.

To meet these ambitions, planning for the Growth Area must:

- provide for future transport integration between the North West, Western Sydney Aerotropolis, South West and Greater Macarthur growth areas
- provide transport options to support population, jobs and economic growth across Western Sydney and Greater Macarthur Growth Area
- locate higher density development in areas that have access to or can be provided with reliable, high frequency public transport
- support future local centres to be designed and planned around future transport infrastructure
- provide reliable and frequent public transport in the early phases of development to discourage car use
- ensure roads within or adjacent to primary koala movement corridors are designed to minimise risks to koalas.

It is appropriate and necessary to provide local public transport access to major centres and public transport interchanges as land release areas are occupied.

*Future Transport 2056* plans a city-serving network to provide high-frequency services within a 10km radius of the Campbelltown-Macarthur and Western Sydney Airport. The NSW Government will investigate the prioritisation of road-based public transport services and invest in higher frequency services.

The centre-serving network connects precincts with their nearest centre. It enables customers living in typically lower density areas to access jobs, education and services in strategic centres and to access city-shaping corridors, such as train, metro and high frequency bus services. On-demand transport, walking and cycling will improve convenience, harness innovation and promote healthy lifestyles. Planned road connections and improvements are outlined in the Appendix and illustrated in Figure 14.

Through *Future Transport 2056*, Transport for NSW has committed to a bus head start program to ensure that residents of new release areas have access to high quality bus services that are fast, frequent and direct from day one of occupation.

*Greater Macarthur 2040* will help deliver *Future Transport 2056*'s vision of more responsive, customer-centric services that keep pace with rapid technological change. Public transport, especially the transport corridor (Figure 13), to be provided through the Growth Area has the potential to capitalise on emerging technology. This could include trackless trams and driverless vehicles. A route for the transport corridor will be confirmed as precinct planning occurs. This will inform investment decisions in land development around the corridor. Reliable, rapid and clean public transport is expected to stimulate diverse housing and employment investment adjoining the identified route.

Bus priority measures, as roads are upgraded in these areas, will include links between Campbelltown-Macarthur, Menangle Park, Gilead and Appin with a potential extension to Douglas Park. Higher density housing, employment and services would be located along this spine supporting access to the Campbelltown-Macarthur centre.





The bus network will connect into a wider local and regional transport system, including potential long-term upgrades to the existing rail network and buses to both the Illawarra and to the new Western Sydney Airport as identified in *Future Transport 2056*. Local transport corridors will support both rail and intermediate networks to provide a finer grain, local service.

Bus stop locations in the Growth Area will be determined in conjunction with Transport for NSW to ensure a high level of coverage. Current best practice shows that people should be within a 10-minute walk of a local bus stop (around 800 metres).

*Future Transport 2056* identifies 0–10 year initiatives for investigation. These include suburban passenger train improvements south of Macarthur (including consideration of passenger services to support growth at Wilton). This program of infrastructure improvements includes, electrification to increase service frequencies to support the Greater Macarthur and Wilton growth areas.

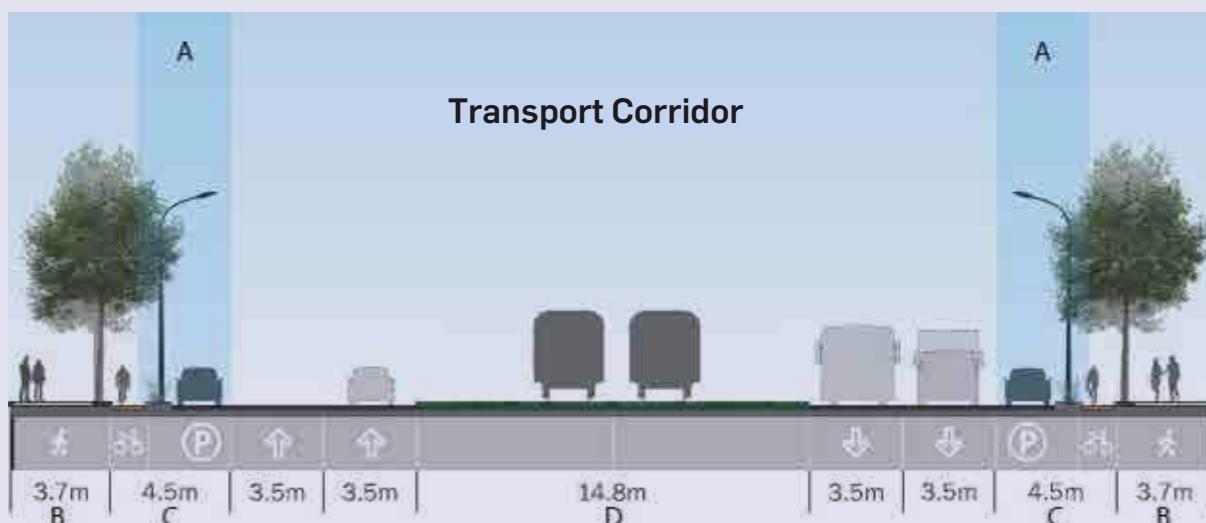
Three new east-west road connections between the Hume Motorway and Appin Road are required to provide sub-arterial road capacity for the Growth Area. This needs to be supplemented by a grid road network to disperse transport and traffic efficiently within the Growth Area.

## Now

The Growth Area north of Macarthur is serviced by public transport. The land release areas south of Menangle Park are serviced by road-based transport. There is a diesel based rail service connecting Macarthur station to the Southern Highlands that runs past Menangle Park.

Public transport is focused on existing rail services including the T2 Inner West and Leppington Line, the T5 Cumberland Line connecting Parramatta and the T8 Airport and South line to Macarthur. The rail service is complemented by local and regional bus services including services to the Illawarra.

The Hume Motorway – with existing interchange access available at Wilton and north of Macarthur at Narellan Road – runs to the west of the Growth Area. Regional roads servicing the area include Appin Road, Menangle Road, Narellan Road, The Northern Road, Campbelltown Road, Raby Road and Badgally Road.

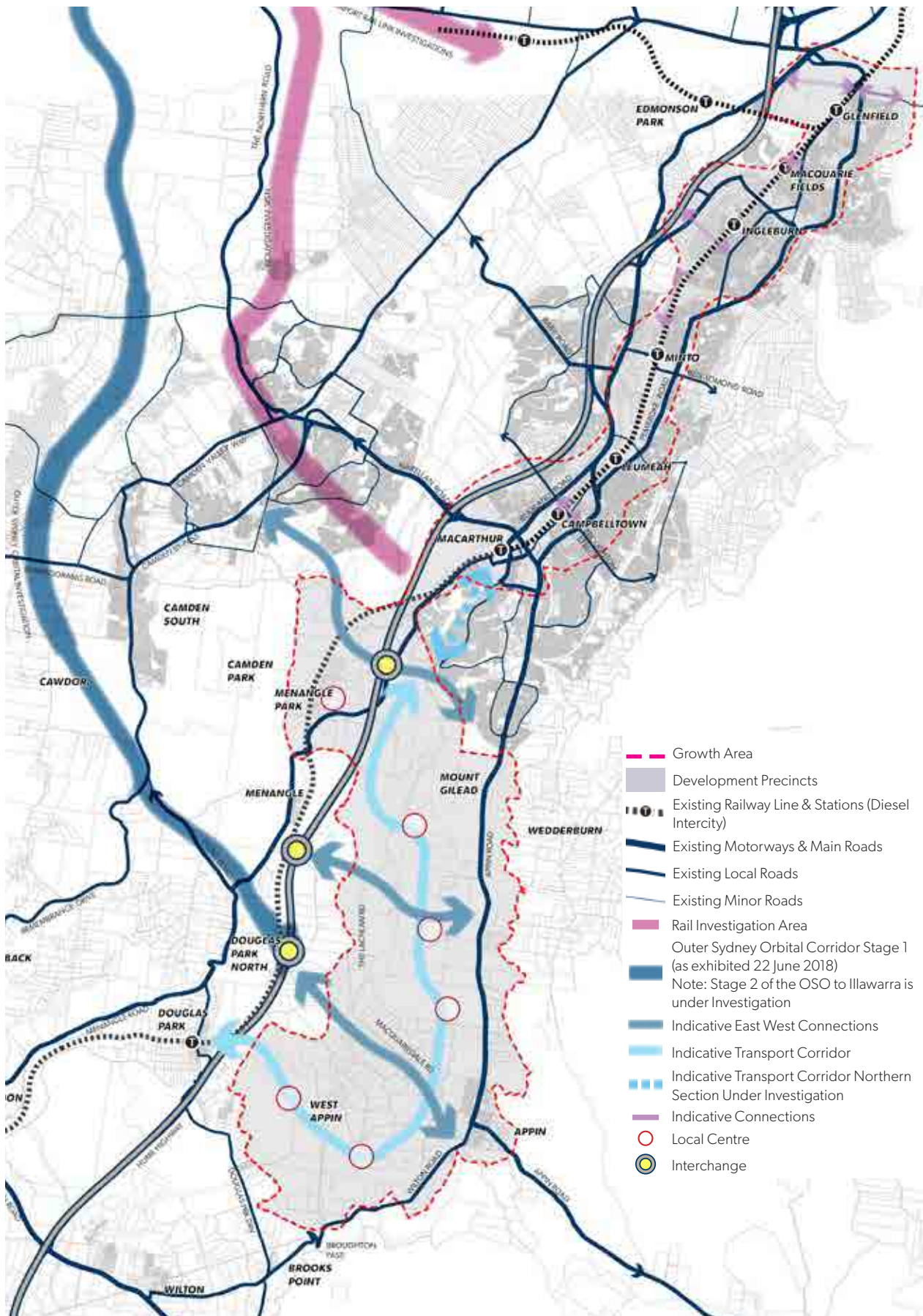


- A. 4m Clear Zone for 70km/h Design Speed with kerb protection.
- B. 3.7m minimum footpath behind kerb to allow for 3m path and tree planting.
- C. .5m zone for parking and cycling. Possible configuration of 1m raised strip for door opening and designated cycle lane.
- D. Median with kerb edge. Accommodates 7–12m transport corridor and a 3m right turn lane. Narrowing possible between intersections and transit steps to a minimum of 10m width.

Source: Adapted from Growth Centres Road Framework (NSW Roads and Maritime Services 2008)

**Figure 13:** Transport corridor

Figure 14: Future transport



## Cycling and walking

### Objectives

Planning for the Growth Area needs to provide new or upgraded separated cycleways, shared user paths, footpaths, pedestrian refuges, end-of-trip facilities and appropriate streetscaping like lighting.

Improved walking and cycling connections to public transport and between precincts will make it safer and easier to move within the Growth Area for the community and improve access to public transport. This includes:

- connected and well-utilised promotion of cycle and pedestrian networks throughout Greater Macarthur.
- a public transport, and walking and cycling extension of Badgally Road and Menangle Road to improve walking, cycling and public transport connectivity to Campbelltown Station and CBD.
- a new regional cycle route from Glenfield to Macarthur adjacent and perpendicular to the rail corridor to improve connections to stations and the surrounding area.
- local walking and cycling network facilities to encourage walking and cycling within precincts.

### Now

Walking and cycling is limited in the urban renewal precincts of the Growth Area with significant reliance on the use of private vehicles. Pedestrian connections between major destinations are limited due to topography and barriers created by the rail and road corridors.

Walking and cycling will increasingly become an important transport option to support the growth of Greater Macarthur. Future precinct planning will review and build on the existing cycle and pedestrian network and explore opportunities to promote and enhance active transport options.

## Connections and crossings

### Objectives

The land release precincts will be based on a three-sector approach enabled by new east-west road connections. Connectivity in the urban renewal precincts also needs to be enhanced.

*Future Transport 2056* identified that planning of the broader transport network is to be informed by a set of co-design guiding principles including:

- provide improved north-south and east-west connections to enable the efficient movement of people and services
- integrate new (and improvements to existing) public transport networks and walking and cycling corridors to reduce dependency on private car use, especially for short to medium trips to the local centres.

A transport study and modelling assessed walking, cycling and public transport options in the Growth Area. This proposed:

- extension of Cambridge Ave from the rail line to the Hume Motorway to service Glenfield west
- a road connection over the rail corridor at Badgally Road to prioritise bus and active transport
- John Hely Link Road at Ingleburn
- a connection between the Hume Motorway and Appin Road at Rosemeadow (Spring Farm Parkway)
- a new east-west connection in Gilead south of Beulah
- a new east-west connection through West Appin
- a transport corridor running north-south through the land release precincts and connected to the rail line at Douglas Park.

### Now

East-west crossings in the urban renewal corridor are in place but need to be enhanced as development occurs.

## Road network

### Objectives

Working with Campelltown City Council's strategic road committee will coordinate investment in transport for Campelltown.

Within the land release precincts, the road network will be integrated with land use planning. The transport structure plan is based on an interconnected, legible, urban-scale grid street pattern to provide optimal opportunities for bus/freight servicing and access.

Koala friendly design, such as koala proof fences along Appin Road, are critical to build koala friendly values into infrastructure design.

Within the urban renewal precincts additional east-west links will improve connections for movement of people and services. Local road improvements will be funded through developer contributions to support additional populations.

### The proposed network

The road network has been defined by an interconnected grid road network and has been designed in conjunction with land use planning in order to create discrete internal 'neighbourhoods' and mixed-use centres of development.

The key features of the proposed road network are:

- **three east-west road connections** as primary arterials with an ultimate configuration of three lanes in each direction
- **a robust and enduring network** that provides for and responds to competing demands for access to the road network, from pedestrians, cyclists, and public transport services which can be local, sub-regional and regional
- **a road hierarchy which is a framework** for categorising roads by their function, consistent with the movement and place framework identified in *Future Transport 2056*
- **optimal opportunities** for the road network to be serviced by an integrated public transport network and walking and cycling
- **separate road user classes** across the road hierarchy, to maintain the efficiency and safety of the environment for all users along the M31 Hume Motorway

- **the protection of land for critical transport corridors** such as the Outer Sydney Orbital
- **provision of sufficient space** to accommodate the needs of transport corridors and freight services.

Transport for NSW has carried out preliminary studies on the corridors for Appin Bypass and Georges River Parkway, and will continue investigations on corridor protection and project viability as development occurs.

A corridor for a high-speed rail connection has not been identified through the Growth Area as investigations have not progressed to corridor preservation stage. *Future Transport 2056* identifies that the preservation of a corridor based on the corridor set out in the Australian Government's High Speed Rail Study will be investigated within 10–20 years with potential delivery beyond 20 years.

All proposed infrastructure will be subject to more detailed investigation during precinct planning.

### **Outer Sydney Orbital**

Transport for NSW is identifying a corridor of land for the Outer Sydney Orbital which would provide for a future north-south motorway and freight rail line. The corridor will support the growth of Western Sydney and the distribution of freight across Sydney and regional NSW. A recommended corridor has been identified in collaboration with the Greater Sydney Commission and the Department. It will support population, housing, freight requirements with connections to Port Botany, and job growth across Western Sydney. It will also ensure appropriate transport solutions are planned for the Western Sydney Aerotropolis.

The future motorway and freight rail line would:

- provide for a major transport link between the North West Growth Area to the South West and Western Sydney Aerotropolis growth areas
- provide a freight rail connection between Port Botany, Western Sydney and regional NSW
- support the further separation of freight and passenger rail
- move freight more rapidly, efficiently and safely by rail.

Transport for NSW is investigating a future Outer Sydney Orbital extension to connect the Illawarra and the Central Coast. Planning for link roads through Appin cannot be concluded until this investigation is complete.

### **Now**

In the north of the Growth Area, the corridor from Glenfield to Macarthur is serviced by a network of roads including Campbelltown Road, Appin Road and local roads. The land release areas are currently serviced mainly by Menangle Road, Appin Road and the Hume Motorway.



Artist's impression only, subject to change.

# IMPLEMENTING THE PLAN

**A coordinated approach across councils and State agencies is fundamental to the success of the Greater Macarthur Growth Area. The Department will collaborate and work with Campbelltown City Council, Wollondilly Shire Council and Camden Council to manage infrastructure delivery and creation of places, streets, open space, and public areas, and support a streamlined planning process.**

Greater Macarthur will be a significant new part of Greater Sydney which in addition to providing residential areas, will provide and develop into an important employment corridor.

*Greater Macarthur 2040* will enable consideration of early activity areas on the assumption of extensive collaboration between the NSW Government, councils, developers and landowners.

## Principles of development of Greater Macarthur

Collaborative workshops were held with major landowners, developers and councils identified the following principles of development for the Greater Macarthur land release areas in the south of the Growth Area:

1. Infrastructure for the Growth Area is not in the NSW Government's infrastructure program so early development including delivery of enabling infrastructure will need to occur at no additional cost to Government.
2. *Greater Macarthur 2040* will provide certainty for landowners by setting out the NSW Government's objectives and framework for sustainable development over 30 years.
3. The urban structure and density of development will be underpinned by investment in public transport.
4. Implementation will occur through a collaborative approach to deliver innovative solutions and a cohesive outcome.
5. The Department of Planning and Environment will consider a wide range of implementation approaches, provided they are consistent with the Growth Area plan and these principles. Landowners will be able to use different options and solutions for land delivery and sequencing of development.
6. Activation of precincts will be led by private sector investment in road and social infrastructure.
7. Conservation of biodiversity and koala colonies will be at the heart of the Growth Area.
8. High quality urban design of the public and private realm will complement areas of conservation to provide high amenity.
9. Employment opportunities will be provided in Campbelltown-Macarthur and locally in each precinct to achieve a 30-minute city for residents.

## Planning pathways

Rezoning will occur over time, guided by the *Greater Macarthur 2040*. Through a local planning direction, rezonings will be consistent with the plan.

No land will be rezoned until there are satisfactory arrangements to deliver infrastructure to support growth and resolve environmental constraints.

The Department will work with councils through the Planning Partnership, and with relevant State agencies and major landowners to progress rezoning proposals for land.

Rezoning can occur through:

- the preparation of a State Environmental Planning Policy amendment by the Department
- planning proposals led by proponents or council.

Each rezoning process must be supported by relevant technical studies as required by the Department. These studies will consider a precinct's development potential in further detail and address key land use constraints and issues.

Studies will include, but not limited to:

- strategic conservation assessment and strategy
- air quality assessment
- flooding assessment
- water cycle management strategy
- heritage and archaeology assessment
- landscape and visual assessment
- bushfire assessment
- agricultural land assessment
- economic development and employment strategy
- retail analysis
- traffic and transport assessment
- social and recreation needs assessment
- infrastructure and servicing strategy
- master planning to prepare an indicative layout plan and a development control plan.

These studies will form the basis of a draft rezoning package for public exhibition. The package will outline proposed road patterns, future land uses, the mix and type of housing, and the location of community facilities and local open space. The rezoning process will also ensure appropriate commitments are in place to deliver necessary infrastructure in time for new homes.

The Department is working with Campbelltown City Council, Camden Council and Wollondilly Shire Council, Transport for NSW and major landowners to progress the merit consideration of active post-exhibition rezoning proposals. Menangle Park and part of Gilead were rezoned in 2017. Rezoning of other precincts will commence in 2019, subject to community consultation.

The Department is proposing the use of a new approach that introduces an urban development zone under the Growth Centres SEPP. This new zone aims to facilitate faster delivery of homes, jobs and infrastructure giving investment certainty about the future land uses expected in the area. The urban development zone would apply to an entire precinct and confer development rights. Development and subdivisions would only occur once detailed precinct plans have been prepared and assessed to show how the strategic planning intent and infrastructure requirements in *Greater Macarthur 2040* have been satisfactorily addressed in the new development. These more detailed plans would apply an urban design process to address issues including biodiversity, heritage and local road networks.

## Local planning direction

To ensure future land use change is consistent with this document, the Department recommends the application of a local planning direction (Section 9.1 Direction) to the interim and finalised plan. This will require future amendments to any local or State planning instruments or planning proposals to be consistent with the interim and finalised plan. In particular, future rezoning proposals should demonstrate:

- consistency with the vision and strategic outcomes of the plan
- that study requirements within the plan have been addressed.

This will enable landowners to progress planning proposals on these sites in advance of the Department or council-led investigations of each precinct.

## Glenfield to Macarthur – Urban Renewal Precincts

In late 2017, the finalised plans for six of the seven train station precincts along the Glenfield to Macarthur Urban Renewal Corridor were finalised. The plans were finalised for Macquarie Fields, Ingleburn, Minto, Leumeah, Campbelltown and Macarthur.

Rezoning within these precincts can now occur through:

- planning proposals submitted by landowners to Campbelltown City Council. These proposals need to be consistent with the relevant precinct plan
- council-led local environmental plan amendments
- NSW Government-led amendments for certain precincts.

After rezoning occurs, Campbelltown City Council will be responsible for implementing the precinct plans.

A Section 9.1 Planning Direction accompanies the precinct plans. The Direction ensures planning proposals submitted to rezone land in the corridor are consistent with the long-term vision for these precincts.

## Glenfield Planned Precinct

*Glenfield 2040* identifies a vision for growth and improvement in the area to 2040, informed by community aspirations identified in a draft Local Character Statement, a draft Green Plan and technical studies that recommend new and upgraded infrastructure.

*Glenfield 2040* can be found here: [planning.nsw.gov.au/glenfield](http://planning.nsw.gov.au/glenfield)

## Voluntary planning agreements

Section 7.4 of the *Environmental Planning and Assessment Act 1979* allows a proponent or developer to enter into a voluntary planning agreement (VPA) to provide State or local infrastructure associated with a change to planning controls or a development application. Major landowners will build most supporting infrastructure to align with the release and development of land and will set aside sites for schools. This will be provided through Voluntary Planning Agreements.

## Special Infrastructure Contribution

A Special Infrastructure Contribution (SIC) scheme is a levy that developers pay to contribute to the cost of providing regional infrastructure upgrades. In preparing a draft SIC scheme, the Department reviews the need for new or expanded regional infrastructure to support the proposed level of development.

The Department has worked closely with infrastructure agencies and other stakeholders to refine the infrastructure items that are listed in the draft SIC and the estimated cost and timing for delivery of this infrastructure. These items include regional road upgrades and capital costs for the new school infrastructure.

Two separate draft SIC schemes have been developed for the land release precinct in the south of the Growth Area and the Glenfield to Macarthur corridor in the north. The Department will exhibit both schemes before they are adopted.



## Local infrastructure

Campbelltown City Council, Camden Council and Wollondilly Shire Council will provide local infrastructure in accordance with their respective local infrastructure and contributions plans. Councils fund most local infrastructure in land release precincts through contributions from developers under Section 7.11 of the *Environmental Planning and Assessment Act 1979*. A Section 7.11 Contributions Plan will enable them to levy contributions on development for essential local infrastructure such as local roads, stormwater facilities and open space.

## Utilities

The primary utility providers are Sydney Water, Endeavour Energy, Jemena and NBN. Feasibility applications and subsequent consultation have been informed by the following directions.

### Water services

Sydney Water has prepared a preliminary strategy to service the land release precincts within Greater Macarthur. Wastewater services can be provided to the initial development of Menangle Park and parts of Gilead Precinct via connection to the existing Sydney Water system. This would occur via Glenfield to the Malabar wastewater treatment plant. Capacity is available to service development forecast to until 2025.

Later stages of land release will require the construction of at least one new wastewater treatment plant. Depending on the rate, timing and location of development, and if Sydney Water is the preferred service provider, it may provide one plant central to Greater Macarthur and Wilton or two new plants in Menangle and Wilton.

Water services can be provided through a combination of extension to existing systems and supply from the Macarthur Water Filtration Plant. New reservoirs and trunk and distribution mains will be required.

Sydney Water will continue planning to service the Growth Area. This process will further consider the standards of treatment required in consultation with regulators, determine cost effective and reasonable options to service the area, and the financial viability of providing recycled water in precincts serviced by new treatment plants.

Any decision by Sydney Water to fund infrastructure will need to meet the principles of its Growth Servicing Plan.

## Telecommunications

NBN will provide infrastructure as part of the Telecommunications Infrastructure in New Development (TIND) Policy.

### Natural gas supply

Jemena has assessed Gilead and Menangle Park separately and indicated that a supply to Gilead is economically viable. Menangle Park is not considered viable to supply at this stage as a significant investment is required to provide the lead-in infrastructure.

### Power network

There is capacity within existing zone substations to supply 6,900 lots in Menangle Park, Gilead, Wilton and West Appin.

By 2021, new zone substations need to be established in Menangle Park and Mount Gilead with associated new 66kV feeder connections.

Supply for the project development rate by 2026 requires:

- augmentation of existing Maldon zone substation
- completion of Menangle Park and Gilead zone substations
- augmentation of up to 50 kilometres of 66kV sub-transmission cabling.

West Appin will also require a new zone substation when the land is released.

## Agency budgets

There is some scope to fund necessary infrastructure through relevant State agencies' capital works budgets. This recognises the limited capacity of contributions to fund all the required infrastructure up front, as well as the fact that some infrastructure improvements would be required in the absence of the growth anticipated in this *Greater Macarthur 2040*.

## Revisiting the plan

To provide a valuable evidence base to inform service and infrastructure delivery as the Growth Area evolves over the next 30 years, the Department will monitor and report periodically on the:

- number of housing approvals, construction commencements and completions for all housing types
- pipeline for additional housing throughout the Western City District
- the number of jobs created in the Growth Area.

The Department will also monitor population, household and dwelling projections for the District and the Campbelltown, Camden and Wollondilly Local Government Areas.

## More information



Contact us on 1300 305 695



Visit <https://www.planning.nsw.gov.au/plans-for-your-area/priority-growth-areas-and-precincts/greater-macarthur-growth-area>

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# NEXT STEPS

## Have your say

The following documents are on public exhibition:

- interim *Greater Macarthur 2040* Plan
- draft SIC schemes

The documents are available on the Department's website: [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

## Finalising the plan

The Department will release the final plan and a Submissions Report on the Department's website that summarises the feedback received during public exhibition. Updates will be based on feedback received during exhibition.

The final plan is proposed to be accompanied by a Direction under s. 9.1 of the *Environmental Planning and Assessment Act 1979* requiring future rezoning and development to be consistent with the final plan. Planning proposals may be inconsistent with the plan if it can be demonstrated to the Secretary of the Department of Planning & Environment that the proposal clearly demonstrates better outcomes and supporting infrastructure can be delivered and the proposal still achieves the vision, objectives, planning principles and actions identified in the plan.

## Rezoning

Rezoning will be required to allow development to occur in accordance with the interim or final plan. Further work will also be required to implement changes to each council's development control plans, where necessary.

The Department will work closely with each council through the Planning Partnership to help inform changes to their local environmental plans and development control plans. There will be further opportunities for the community to provide feedback as part of the public exhibition of precinct plans.

## Delivery

Development will start to occur in accordance with the final plan, once areas identified for proposed changes to existing planning controls have been rezoned. While the speed of development will depend on market forces, the Department anticipates this will occur incrementally over the 30 year life of the plan.

We are here

EXHIBITION

FINALISING  
THE PLAN

REZONING

DELIVERY

# GLOSSARY

**Better Placed** is a policy for our collective aspirations, needs and expectations in designing NSW. It is about enhancing all aspects of our urban environments, to create better places, spaces and buildings, and thereby better cities, towns and suburbs.

**Development Control Plan** Provides detailed planning and design guidelines to support planning controls.

**Ground-truthing** Confirming accuracy of information collected using site survey by on site survey, observation or recording of GPS coordinates.

**Greater Sydney Region** Means the region comprising the local government areas within the boundary shown on the map in Schedule 1 of the Greater Sydney Commission Act 2015.

**Growth Area** Identified by the NSW Government as major greenfield development areas.

**Legacy gas wells** A gas well that has been drilled and abandoned and has no known owner.

**Local centre** Smaller-scale places that vary from a few shops on a corner to a vibrant main street and generally serve a local population.

**Local Environmental Plan (LEP)** A statutory spatial plan comprising planning controls to determine the type and amount of development that can occur on a parcel of land. In the Greater Sydney Region, LEPs can be made by the Minister for Planning or the Greater Sydney Commission.

**Neighbourhood planning** A Precinct will be separated into different areas and each area will be staged in its development. The neighbourhood planning process relates to each development stage. A neighbourhood plan is required to be submitted for each stage prior to the submission of development applications for lots.

The Neighbourhood Plans provide up to date spatial allocation, where the land use typologies and lots are located within a phasing plan. The objective of the neighbourhood plan process is to ensure that each neighbourhood plan per phase is responding to the successes of previous phases. This would include monitoring the development and population capacities and ensuring the typologies are responding to market forces and desires.

**Peri-urban farming** Agriculture undertaken in places on the fringes of urban areas.

**Precinct planning** Precinct planning identifies the development intent and development capacity across the entire precinct, through the allocation of land uses and densities. Precinct Planning includes land uses, housing choices, built form, infrastructure, and environmental and open space desires.

**Planned precinct** A planned approach to growth, with new homes and jobs close to public transport, shops and services, while retaining and enhancing a community's character.

**State Environmental Planning Policy (SEPP) A** statutory plan, typically prepared by the NSW Department of Planning and Environment and endorsed by the Minister for Planning that can be a spatial plan for particular land in NSW, and/or set policy that applies to particular land or all land in NSW.

**Strategic centre** Places with one or more of the following characteristics:

- a higher proportion of knowledge-economy jobs, principally relating to the presence of major hospitals, tertiary education institutions, standalone office development or a combination of these
- the presence of existing or proposed major transport gateways
- a major role in supporting the increased economic activity of the Eastern, Central or Western cities.

# APPENDIX

## Draft infrastructure list

The items included in the draft SIC below will be exhibited, and the list will be updated prior to finalisation. Some items will not be fully funded by the SIC. The SIC will be reviewed every two years as infrastructure investigations progress.

**Table 3:** Draft infrastructure schedule

Measure	Delivery	Timing	Assumptions
<b>Regional/State road network</b>			
<b>Glenfield to Macarthur</b>			
Potential regional road upgrades to improve road network connections, including a number of road extensions such as for Cambridge Avenue and Badgally Road	Campbelltown City Council/ developer	In stages with precinct development	Funded by Section 7.11 contributions with additional funding by NSW and Local Government required
Investigate connection from Broughton Street to Bagdally Road and extension of Bagdally Road over rail line	Campbelltown City Council/ developer	2018	Funded by Section 7.11 contributions with additional funding by NSW and Local Government required
Investigate connection from Victoria Road to Railway Parade	Campbelltown City Council	2018	Funded by Section 7.11 contributions
Investigate John Hely Industrial Link Road	Campbelltown City Council	2019	Funded by SIC and Section 7.11 contributions
<b>Land release precincts</b>			
Upgrades to the Hume Highway	RMS	In line with development of Menangle Park	Funded by Government
North-south arterial for public transport at Menangle Park and Gilead	RMS/Developer	In stages with precinct development	Funded by SIC
Upgrade Appin Road to two lanes in each direction and undertake safety improvements between Rosemeadow and Appin's south. Note in the longer term with development of Appin, three lanes in each direction will be required	RMS/Developer	Duplication required in stages. First staged triggered by 1,700 lots at Mount Gilead	Funded by SIC with a \$10M contribution from the Housing Acceleration Fund

Measure	Delivery	Timing	Assumptions
Complete arterial from Spring Farm Parkway to connect Menangle Park Development to the Hume Highway	RMS/ Developer	Stage one in line with first phase of Menangle Park Stage two	Funded by SIC with a \$30 million Housing Acceleration Fund contribution
Complete arterial from Spring Farm Parkway to connect Menangle Park to Liz Kerohan Drive			
New arterial to bypass established and expanded Appin town centre	RMS/ Developer	In line with development of Appin	Funded by SIC
Upgrade Macquariedale Road to connect Bulli-Appin Road and Menangle Road with a potential Hume Motorway interchange	RMS/ Developer	In line with development of Appin	Funded by SIC
Transport corridor	Developer	Implemented in stages with an ultimate configuration that will accommodate 2 lanes in each direction with pedestrian and cycleways and a 14m public transport corridor.	Funded by SIC
Construct new link road between Appin Road and M31 south of Beulah within the Gilead precinct to service Appin.	RMS/ Developer	In line with development of Appin	Funded by SIC
Widening of Menangle Road	RMS/ Developer	In stages	SIC and RMS
North-south arterial for public transport at Menangle Park and Gilead	RMS/ Developer	In stages with precinct development	Funded by SIC
Macquariedale Road river crossing	RMS/ Developer	In line with development of Appin	Funded by SIC
North-south arterial river crossing	RMS/ Developer	In line with development of Appin	Funded by SIC

Measure	Delivery	Timing	Assumptions
<b>Walking and cycling</b>			
Streetscape works such as footpath improvements, pedestrian crossings and refuges, street tree planting, bicycle storage facilities and lighting	Campbelltown City Council	In line with development	Funded by Section 7.11 contributions
<b>Glenfield</b>			
Rail crossing (shared path: pedestrian and cycleway) – south of railway station	Campbelltown City Council/ TfNSW	To be delivered in stages	Funded by SIC
Regional cycleway from Glenfield to Macarthur	Campbelltown City Council/ TfNSW	To be delivered in stages	Funded by SIC
New shared pedestrian-cycleway connection between Badgally Road and Broughton Road	Campbelltown City Council/ TfNSW	Timing to be determined	Funded by SIC
New cyclepath along Redfern Road between Minto Marketplace and Minto Station	Campbelltown City Council/ TfNSW	To be provided as precinct develops	Funded by Section 7.11 contributions/ voluntary planning agreement
New eastern corridor cycleway	Developers/ Campbelltown City Council	Required in stages with each precinct	Funded by Section 7.11 contributions and delivered by developers as works in kind
New Menangle Road cycleway	Developers/ Campbelltown City Council	To be provided as precinct develops	Funded by Section 7.11 contributions and delivered by developers as works in kind
New East-West cycleway following Spring Farm Parkway	Developers/ Campbelltown City Council	To be provided as precinct develops	Funded by Section 7.11 contributions and delivered by developers as works in kind
<b>Land release precincts</b>			
New eastern corridor cycleway	Developers/ Campbelltown City Council	Required in stages with each precinct	Funded by Section 7.11 contributions and delivered by developers as works in kind
New East-West cycleway following Macquariedale Road	Developers/ Wollondilly City Council	To be provided as precinct develops	Funded by Section 7.11 contributions and delivered by developers as works in kind

Measure	Delivery	Timing	Assumptions
<b>Public transport</b>			
<b>Glenfield to Macarthur</b>			
Investigate rail improvements to support growth	TfNSW	Subject to review	TfNSW delivery responsibility
Suburban bus network improvements	TfNSW	Subject to review	TfNSW delivery responsibility
Improvements to local bus services	TfNSW	Subject to review	TfNSW delivery responsibility
Additional kiss and ride facilities at Glenfield, Ingleburn and Minto Stations	TfNSW/ Campbelltown City Council	In stages with precinct development	Funded by Section 7.11 contributions
<b>Land release precincts</b>			
New bus depot Bus stops on identified bus corridors	Developers and TfNSW	To be informed by detailed planning for suburban bus routes as precinct develops	Funded by NSW Government
New bus stops on identified corridors and bus lanes on the north-south arterial	Developers and TfNSW	Required in stages with each precinct	Funded by NSW Government
<b>Drainage and flooding</b>			
Drainage basins and stormwater management infrastructure	Developers/ Campbelltown City Council	Required in stages with each precinct	Funded by Section 7.11 contributions and delivered by developers as works in kind
<b>Education</b>			
New primary schools and secondary schools in land release precincts	Developers/ Department of Education	Required in stages as each precinct develops	Land provided through SIC and capital cost and recurrent funding by NSW Government or dedicated by developers as part of the infrastructure contribution
Expansion of/or new primary schools at Glenfield, Campbelltown, Macquarie Fields, Minto, Campbelltown South, and Liverpool			
Glenfield education precinct, providing fully selective high school, three upgraded schools for specific purposes			



Measure	Delivery	Timing	Assumptions
<b>Community infrastructure</b>			
Two police shopfronts and one new police station at Menangle Park/Gilead	Developers/ NSW Justice	Required in stages as each precinct develops	Land provided through SIC and capital cost and recurrent funding by NSW Government
Five police shopfronts and one new police station at Appin			
Two new permanently staffed fire stations at Gilead and Appin	Developers/ Fire and Rescue NSW	Required in stages as each precinct develops	Land provided through SIC and capital cost and recurrent funding by NSW Government
Primary health care clinics	Developers/ NSW Health	Required in stages as each precinct develops	Land provided through SIC and capital cost and recurrent funding by NSW Government
Two moderate district multipurpose community centres (500m <sup>2</sup> in Mount Gilead and 700m <sup>2</sup> in Menangle Park) and one local community centre (120m <sup>2</sup> within a local centre)	Developer/ Campbelltown City Council	Required in stages as each precinct develops	Funded by SIC and Section 7.11 contributions
Redevelop community hall at Glenfield to multipurpose community centre			
Two libraries (total 2,650m <sup>2</sup> )	Developer/ Campbelltown City Council	To be delivered in stages	Funded by SIC and Section 7.11 contributions
Medium-longer term expansion of Greg Percival Library and community centre in Ingleburn			
Cultural facility (500m <sup>2</sup> in Gilead)	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by SIC and Section 7.11 contributions
The space can be integrated into another council facility such as a library, tourism centre or multipurpose centre			
Child care and out of school hours care	Developer/ Campbelltown City Council	To be delivered in stages	Funded by SIC and Section 7.11 contributions
Indoor sports facilities	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by SIC and Section 7.11 contributions
Investigate potential redevelopment of Campbelltown Stadium and surrounds to a regional sport centre			
Indoor aquatic/swimming facilities	Developer/ Campbelltown City Council	Assess potential for recreation opportunities	State funding to be sought
Investigate long-term expansion of Macquarie Fields Leisure Centre into regional aquatic facility			

Measure	Delivery	Timing	Assumptions
Youth recreation facilities	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by Section 7.11 contributions
Local parks for each neighbourhood (at least 3,000m <sup>2</sup> ) Investigate improvement of Kennett and Seddon Parks in Glenfield	Developer/ Campbelltown City Council	Assess potential to improve passive recreation opportunities	Funded by Section 7.11 contributions
One district park for each district (at least three ha)	Developer/ Campbelltown City and Wollondilly Council	Assess potential as precincts develop	Funded by Section 7.11 contributions
Embellishment works at Memorial Oval Ingleburn	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by Section 7.11 contributions
Sports grounds, with two playing fields each and double sports grounds with four playing fields each in line with NSW Government Architect's guidelines and green plan for each precinct	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by Section 7.11 contributions
Outdoor sports courts, including six multipurpose courts, 22 tennis courts, three basketball courts and six netball courts	Developer/ Campbelltown City Council	Assess potential as precincts develop	Funded by Section 7.11 contributions
Ingleburn Community Health Centre	NSW Health	To be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Ingleburn Oral Health Clinics	NSW Health	To be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Glenfield Integrated Health Hub	NSW Health	To be provided as precinct develops	Capital works to be funded by SIC
Ingleburn Early Childhood Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Robert Townson Public School Clinic	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Macquarie Fields Early Childhood Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions

<b>Measure</b>	<b>Delivery</b>	<b>Timing</b>	<b>Assumptions</b>
Rosemeadow Community Health Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Macarthur Community Mental Health Services	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Macarthur Youth Mental Health Service	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Traxside Youth Health Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Aboriginal Elders Group	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Bolger St – Suite 1	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Bolger St – Suite 2	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Macarthur Square Early Childhood Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Macquarie Fields Early Childhood Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Mawson Park Early Childhood Centre	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Claymore Public School Clinic	NSW Health	Maintained and to be provided as precinct develops	Funded by SIC and Section 7.11 contributions
Campbelltown Hospital	NSW Health	Redevelop and expanded Campbelltown Hospital (due for completion 2023).	State Funding

