Herring Road Urban Activation Precinct

Planning Report
Volume 1

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Executive summary

Planning and Environment (the Department) proposes the renewal and revitalisation of the Herring Road precinct as part of a balanced and sustainable strategy to deliver Sydney with much needed new housing and employment in accessible locations. As part of this strategy, this planning report supports the proposed rezoning of the Herring Road Urban Activation Precinct. It has been prepared by the Department to provide an overview of the proposed rezoning.

Urban activation precincts

A major challenge for government is how to house and provide jobs for the extra 1.5 million residents forecast by the Draft Metropolitan Strategy for Sydney to 2031. Since many new homes will need to be located in existing urban areas, the Department is planning for growth in some areas through its Urban Activation Precinct Program. Urban activation precincts are generally located close to a centre or multiple centres and with good access (within an 800m walking catchment) to public transport, shops and services.

In July 2012, the City of Ryde proposed that the NSW Government consider an area around Herring Road, Macquarie Park as an urban activation precinct. Herring Road was identified as a potential urban activation precinct in the Draft Metropolitan Strategy and the precinct satisfactorily meets each of the five urban activation precinct criteria.

Why Herring Road?

The precinct includes Macquarie University and Macquarie Shopping Centre and benefits from its close proximity to Macquarie Business Park employment opportunities. Macquarie University Train Station provides excellent access to Sydney's central business district and other metropolitan centres. Herring Road acts as the primary access street from surrounding residential areas to the train station, university and shopping centre. It is evident that Herring Road already demonstrates many characteristics of a transit-oriented development and an active 'live-learn-work' community.

The Macquarie Park precinct is directly accessible by rail and predicted to provide about 55,000 jobs by 2021. Macquarie University is a major education and research facility, with approximately 38,000 students. The Metropolitan Strategy plans for the Macquarie Park Specialised Precinct to provide at least 16,000 additional jobs by 2031.

The Herring Road precinct proposal can optimise the use of existing and planned infrastructure as it is well located to good and improving rail and bus services and roads. The precinct is in close proximity to a growing local jobs market which forms a key part of Sydney's Global Economic Corridor, includes a top ten university campus and has easy access to a major shopping centre. The precinct has the potential to significantly increase the delivery of housing and provide sustainable local growth through good urban design.

Herring Road proposal

By 2031, the Herring Road precinct will be transformed into a vibrant, connected and walkable transit-oriented centre, vital to the evolution of Macquarie Park. Building on its existing business, retailing and educational success, Herring Road will attract more people to live, study and work in the area.

A greater supply and mix of housing ensures that more people benefit from Macquarie Park's employment, retail and education opportunities. Excellent transport infrastructure provides easy access to metropolitan

jobs and city culture. The precinct provides sustainable higher density living convenient and accessible to local shops and services, recreational facilities, community facilities and local and regional parks. A more connected street structure focuses development and activity around public transport, shops and services and transforms Herring Road into an attractive and comfortable place for people.

The Herring Road precinct proposal comprises:

- a mix of land uses to transform the precinct into an active place for living, learning and working
- a quality higher density urban community that utilises excellent transport infrastructure and access to job markets, educational facilities, retail, local services and recreational assets
- increased building heights and densities that can improve housing supply and choice
- a transformation of Herring Road into an active street, with wider pavements, new landscaping and new places to meet
- better connected and finer-grained streets and pedestrian / cycle and networks providing safer, more convenient and pleasant access
- opportunities for new and improved parks, spaces, playgrounds and community facilities

Statistics and analysis from the ABS 2011 Census suggest that the Herring Road precinct's growing and younger demographic profile is strongly influenced by the proximity of the university and the employment opportunities offered by the business park and shopping centre, the availability of higher density housing options and good access and proximity of good rail and bus transport services. Equally, many of these locational factors are also attractive to the older demographic of empty nesters, retirees and seniors.

Depending on future market demand, it is estimated the precinct could deliver 2,000-2,400 new homes by 2021 rising to 4,500-5,400 new homes by 2031. This housing could increase the local residential population proportionately by 4,200-5,040 persons in 2021 and 9,450-11,340 persons in 2031.

Like any major renewal area, the revitalisation of Herring Road is a long-term project that will be delivered over the next 20-30 years. Planning controls are proposed to provide a flexible land use and design framework to guide the long-term renewal of the precinct, with the City of Ryde as the planning authority.

Transport and traffic

A key element of the balanced and sustainable growth of Metropolitan Sydney is integrated land use and transport planning. The Herring Road precinct presents an excellent opportunity to build upon existing land use and movement patterns and create a transit-oriented development focused on the public transit network. Herring Road is an opportunity to deliver integrated land use and transport planning and transit-oriented development (TOD) that can:

- increase the use and viability of public transport investment, matching frequent, fast, reliable public transport services and capacity with density of development
- increase residential densities in existing transport corridors to create a more connected and compact region that improves access opportunities to a greater range of metropolitan jobs
- enable mixed-use centres and residential neighbourhoods that provide opportunities for retail, employment, commercial and civic uses and a mix of medium to high density housing located within easy walking distance to transport
- promote 'active transport' to achieve shifts in transport modes that increase trips by public transport, increase cycling trips / walking trips, reduce and regulate parking and reduce 'car as driver' trips
- develop neighbourhoods with a mixed use and residential character that integrate local services and connect communities with a network of streets and paths that promote walking and cycling
- deliver new quality public spaces and improve the quality of existing public spaces and places accessible to the community
- provide opportunities for sustainability, such as energy efficiency, water conservation and water sensitive urban design

The 2011 Census Journey to Work data demonstrates that Herring Road exhibits many characteristics of a transit-oriented development and active 'live-work' community. The data shows that 24% of existing residents in the precinct either walk or cycle to work, a figure significantly higher than many other existing centres and urban renewal areas. A further 23% travel to work by rail and 9% by bus, which means 56% of local residents already choose not to drive to work. This illustrates that existing residents already benefit from the close proximity of diverse local employment opportunities provided by the university, the shopping centre and the business park. This in turn creates a robust platform for future increases in residential and mixed-use development activity.

Community consultation

Community consultation undertaken through community forums and meetings with key local stakeholders, the City of Ryde and key government agencies was valuable to incorporate needs, ideas and aspirations.

Through a series of meetings, consultation with the community revealed a clear priority for local improvement was the renewal and activation of Herring Road itself, including active street frontages, a two-way separated cycleway, safer and convenient pedestrian crossings and increased pedestrian amenity.

Through the Precinct Support Scheme, the NSW Government has allocated up to $5 million to the Herring Road precinct to fund local infrastructure upgrades. This funding could be allocated towards an upgrade of Herring Road to benefit residents.

Next steps

At the end of the public exhibition period, Planning and Environment will consider all submissions received and make amendments to the proposal, if necessary, to address any issues.

1 Introduction

This planning report provides supporting information for the Herring Road Urban Activation Precinct proposal. It has been prepared by Planning and Environment (the Department) and provides an overview of the proposed rezoning amendments and a consideration of potential impacts.

1.1 Urban activation precincts overview

In 2013, the NSW Government announced a number of areas in Sydney as urban activation precincts (as shown in Figure 1), including Herring Road. The purpose of the Urban Activation Precinct Program is to increase housing supply in an environmentally, socially and economically sustainable manner. This intent is to be achieved by undertaking strategic planning for precincts that have good access to infrastructure, particularly transport, and redevelopment significance of a scale that is important to implementing the State's planning objectives.

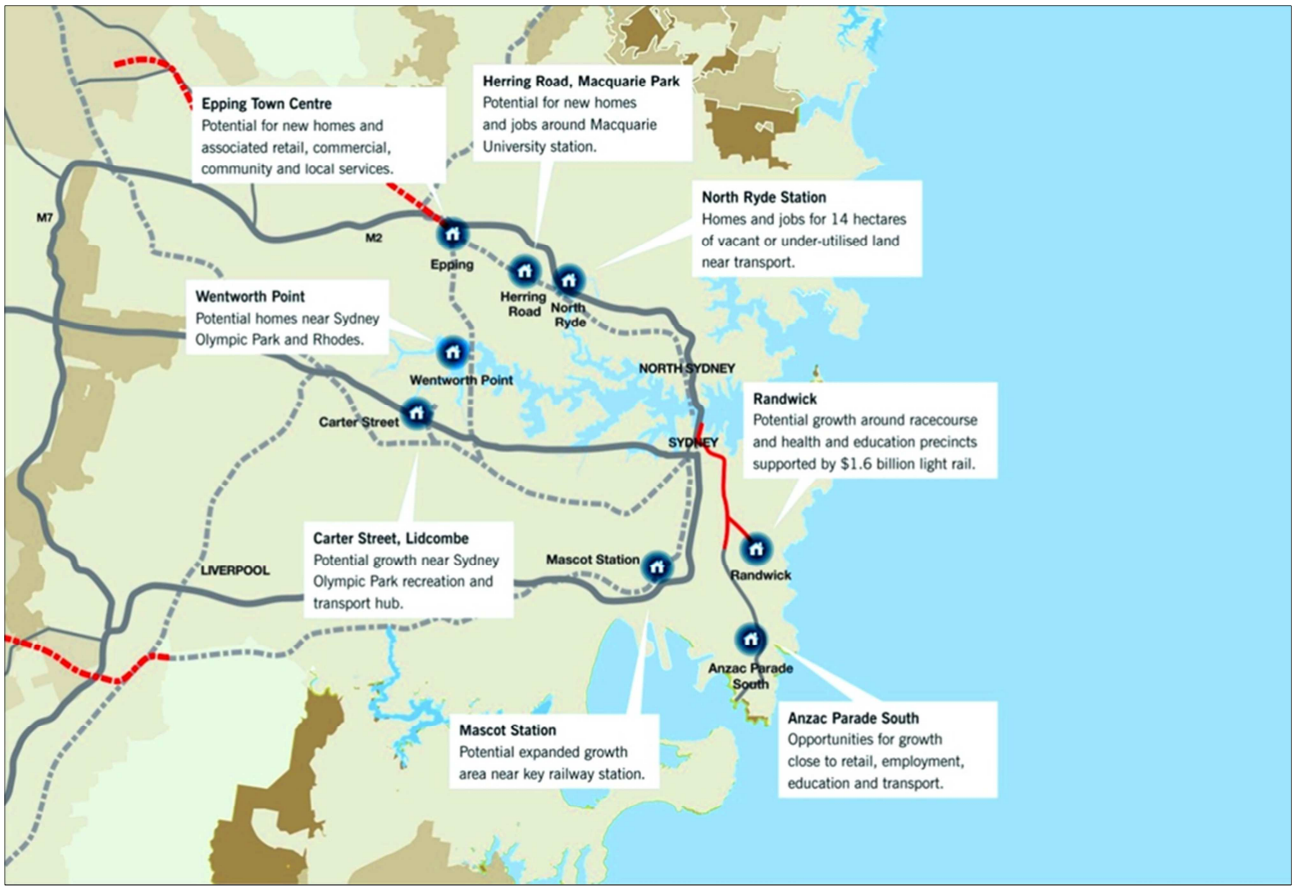

Figure 1 **Location of current urban activation precincts in Sydney**

The aim for Sydney for the next 20 years is for *'a strong global city ... a liveable local city'*. This is the key message of the Draft Metropolitan Strategy for Sydney to 2031. It outlines the challenges for Sydney and the way to plan for balanced growth to develop a strong global city that is also a liveable local city.

The biggest challenge for Sydney is how to house and provide jobs for the extra 1.5 million residents forecast for Sydney by 2031. This will create a need for another 545,000 homes.

Some of these new homes will be in areas on the edge of Sydney that have previously never been developed. But many will need to be in existing urban areas so that people can choose to live close to jobs, public transport, services, friends and family. The Department is planning for growth in some of these areas through the Urban Activation Precinct Program.

Changing preferences and lifestyles

Sydney is changing all the time. As well the need to house and provide jobs for a growing population, there is also a need to consider and plan for the changing preferences and lifestyles of Sydney's residents. Urban activation precincts plan for development over the medium to long term and therefore need to consider these changes.

Desire to live near centres

People want to live near centres to make their lives simpler and more enjoyable. Centres focus shops, services, transport and cultural activities. They may be a large centre such as Sydney or Parramatta CBD, or a smaller local suburban shopping centre. By living close to a centre, people can walk or cycle to shops and services for everyday needs. They can also easily access public transport spending less time travelling to work and more time with friends and family.

Preference for apartments

Many Sydneysiders are choosing to live in apartments rather than houses. These include older generations who are downsizing, younger people who want convenience, and families who enjoy more time together by being close to workplaces and public transport. Some people like the advantages of communal facilities (open space or a pool or gym) with reduced responsibility for maintenance. The preference for apartments is shown in housing statistics with more apartments being built than freestanding houses and the weekly rent for an apartment the same as for an equivalent house in some areas. Urban activation precincts plan for apartments close to public transport, shops and services. An increased supply of apartments can also improve housing affordability.

Convenient transport options

People want to live close to their workplace, shops and services. By locating apartments close to public transport, it is easily accessible to more people. Increased use of public transport benefits the community through lower greenhouse emissions and reduced traffic congestion. Rising costs of car ownership and fuel, traffic congestion and an awareness of the impacts of climate change, have lead some people to reconsider their need for a car. A car share scheme is an option chosen by an increasing number of people. According to a Sydney car share scheme, one car share vehicle can replace the need for 9-13 private cars. Many new apartment complexes include car share parking spaces. Fewer young people are getting their driver's licence and fewer young people own a car. Instead many utilise social media and shop online, so owning a car is not a priority.

Urban activation precincts encourage 'active transport', such as walking and cycling, by planning for apartments close to public transport, shops and services.

Ageing in place

Our population is ageing. As people get older, many want to downsize from a large family home to one that is easier to maintain. But they want to remain in the same area to be close to friends and family. To enable people to grow older in their existing communities, new housing types need to be built. Urban activation precincts plan for varied housing options: high density residential (apartments) and medium-density residential (smaller apartment buildings and townhouses) in addition to retaining existing low-density residential (traditional houses).

Walkable centres

Most urban activation precincts are based around a centre or multiple centres. A major consideration for the location of a precinct is walking distance to public transport, shops and services. A rule of thumb is that most people are comfortable with a ten-minute walk to public transport and shops and services. A ten-minute walk is approximately 800m.

Evidence based planning

All urban activation precincts follow a similar process to determine the most appropriate development for the medium to long term. First, a series of studies are undertaken to understand the existing constraints and opportunities within the precinct. The studies may look at existing planning controls, heritage, environment, land ownership (few owners of large landholdings or many owners of small sites), strata and recent developments (areas unlikely to be redeveloped in the short or medium term), transport, public spaces, economic feasibility, flooding, connectivity and accessibility (how easy is it to get around), footpaths and cycleways.

The results of these studies are combined to provide the basis for where future development could be best located within the precinct. The Department works with experienced urban designers, local councils and the community to develop a proposal for the rezoning of areas within the precinct. Not all areas within every precinct will need to be rezoned.

Community consultation

Community consultation is important in developing plans for all urban activation precincts. Most precincts had a community forum or community reference group which met during the precinct investigations to:

- ensure the Department is aware of the community's ideas and aspirations, and
- receive feedback from the community about planning options.

Draft plans are exhibited for community consultation before being finalised. Community information sessions are held during the exhibition period so that the community can hear about the proposal, ask questions and articulate concerns.

The Department's website is regularly updated so the community can follow the progress of each urban activation precinct.

Precinct support scheme

There is also a State Government funded Precinct Support Scheme of $50 million to be shared between the urban activation precincts to improve public spaces, streetscapes, local access and walkability.

1.2 Why Herring Road?

The Herring Road Urban Activation Precinct is one of eight urban activation precincts announced by NSW Government. The City of Ryde initially nominated Herring Road as a potential precinct in July 2012.

The Herring Road precinct is located at the north western end of the Macquarie Park Specialised Precinct. The precinct is bounded by Epping Road to the south, the M2 motorway to the north and Culloden Road to the west. The eastern boundary follows Shrimptons Creek and extends along the outer edge of Macquarie Shopping Centre and Macquarie Business Park. Other major land uses in the Herring Road precinct include Macquarie University and Hospital, Willandra Village, Morling College and Ivanhoe Estate.

Herring Road was chosen as an urban activation precinct to accommodate some of Sydney's future growth as it is:

- strategically located close to the geographic centre of the Sydney metropolitan region being approximately 18 km northwest of the Sydney CBD, 9 km west of Chatswood and 15 km east of Parramatta.

- a key part of Sydney's Global Economic Corridor, which extends from Sydney Airport and Port Botany through Sydney CBD, North Sydney, Chatswood, Macquarie Park towards Parramatta and Norwest Business Park
- an important part of the Macquarie Park Specialised Precinct, identified in the Metropolitan Strategy for Sydney as a location for future jobs and housing growth
- well serviced by public transport including the Macquarie University Train Station and bus interchange
- contains a number of large landholdings that provide opportunities for redevelopment
- an area with strong market demand for additional housing.

1.3 Report structure

This planning report is structured as follows:

Volume 1

Section 1 Introduction - outlines the urban activation precinct initiative and why Herring Road was selected to accommodate further growth

Section 2 Precinct overview - provides a description of the precinct and its context

Section 3 Herring Road precinct proposal - provides a description of the proposal, including key development controls

Section 4 Consultation - provides an overview of matters raised by the community through development of the proposal

Section 5 Key considerations - outlines how key issues have been investigated and addressed

Section 6 Infrastructure summary - outlines the infrastructure items required to support the precinct

Section 7 Next steps - outlines what will happen after the exhibition of the proposal

Volume 2

Appendices - provide a number of documents that support and explain the report, or specialist consultant studies undertaken as part of the planning process

2 Precinct overview

This section of the planning report provides an overview of the Herring Road Urban Activation Precinct, outlining both its strategic and local context.

2.1 Strategic context

The Herring Road precinct is located at the north-western edge of Macquarie Park, which forms a key part of Sydney's Global Economic Corridor and the Central Subregion of the draft Metropolitan Strategy for Sydney to 2031, as shown in Figure 2.

The Global Economic Corridor extends from Sydney Airport and Port Botany in the south through the major employment centres of the Sydney Central Business District, North Sydney, Chatswood, Macquarie Park and towards Parramatta and Norwest Business Park.

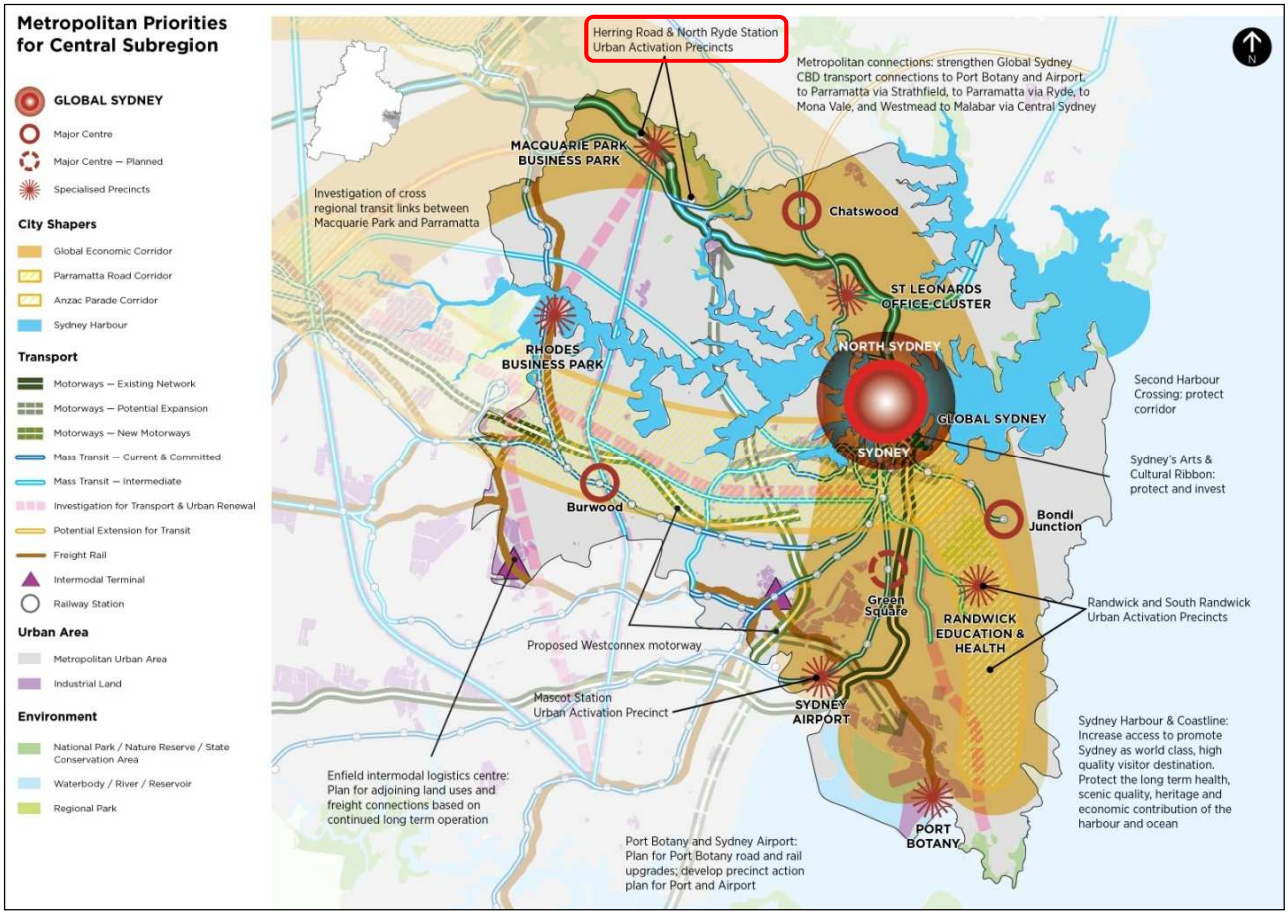

Figure 2 **Metropolitan strategic context of the precinct**

Macquarie Park is classified as a 'Specialised Precinct' in the draft Metropolitan Strategy. This precinct comprises of Macquarie Park Business Park, Macquarie University, Macquarie University Research Park, Macquarie Centre, Macquarie Park and Riverside Corporate Park.

The Macquarie Park precinct is directly accessible by rail and predicted to provide about 55,000 jobs by 2021. Macquarie University is a major education and research facility, with approximately 38,000 students. The Metropolitan Strategy plans for the Macquarie Park Specialised Precinct to provide at least 16,000 additional jobs by 2031.

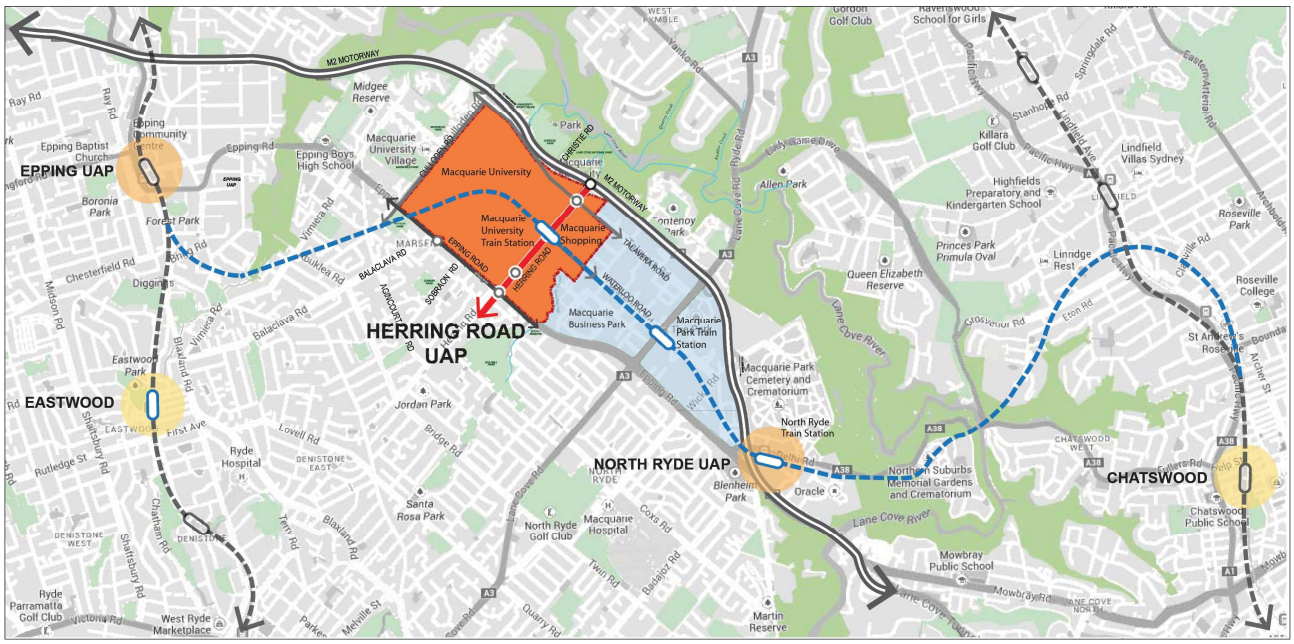

Figure 3 **Herring Road precinct context plan**

2.2 Local context and demographics

The Herring Road precinct is located wholly within City of Ryde local government area and the Macquarie Park Business Park Specialised Precinct. The Herring Road precinct (as illustrated in Figures 3 and 4) has an area of 157 hectares and is generally defined by Epping Road to the south-west, Culloden Road to the north-west, Talavera Road / M2 Motorway to the north-east and Shrimptons Creek and the Macquarie Park Shopping Centre to the south-east. Macquarie University is a significant landowner within the precinct with 85 hectares.

The precinct is serviced by Macquarie University Train Station, centrally located at the corner of Waterloo Road and Herring Road. The train station is on the Epping to Chatswood Rail Line, which will benefit from the completion of the North West Rail Line in 2019-20. The majority of the Herring Road precinct is located within easy walking distance of train station, defined as 400m to 800m, which equates to a 5 to 10 minute walk. The M2 Motorway is located approximately 0.5 km north of the train station.

To the south-east of the precinct, the Macquarie Park Business Park features low rise commercial buildings with large footprints. These larger land holdings are accessed by a grid of major streets (Waterloo Road, Talavera Road, Herring Road, Lane Cove Road and Wicks Road).

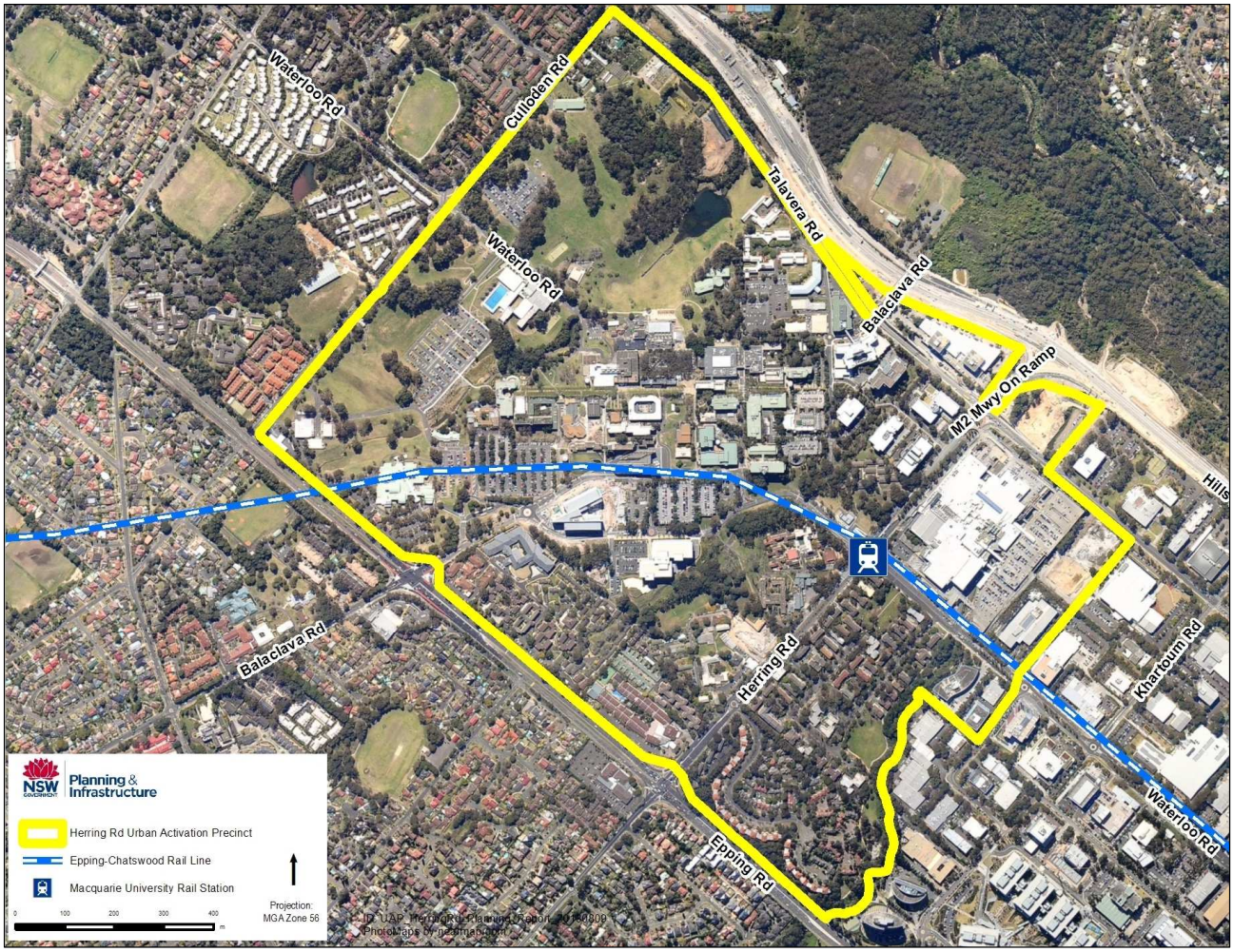

Figure 4 **Herring Road Urban Activation Precinct**

To the south-west of Epping Road and outside the precinct, the area is dominated by a finer grain of streets and single dwellings houses. A series of parks and open spaces including Dunbar Park, Els Hall Park, Greenwood Park and Booth Reserve complement the regular pattern of residential streets.

The area north-west of the precinct is defined by a series of smaller developments consisting of university residences, retirement villages, Epping Boys High School, Marsfield Park open space and a range of residential developments.

Lane Cove National Park is located to the north-east of the precinct and the M2 motorway, with the edge of park approximately 1km from the train station.

Demographic overview

Data from the 2011 Census (Australian Bureau of Statistics) and analysis by .id illustrates that Macquarie Park and the Herring Road precinct are characterised by:

- a residential population steadily growing since 2005
- an estimated residential population for the City of Ryde of 110,390 persons and for Macquarie Park as 6,149 persons (2012 estimate)
- a younger demographic profile, with larger proportions of persons aged 20-34, compared to the City of Ryde
- a significantly larger percentage (23%) and increasing numbers of residents who are part of the younger work-force or in tertiary education (Macquarie Park compared to the City of Ryde)

- a well-educated and qualified residential population, with a larger percentage of persons attending a tertiary / technical institution (Macquarie Park compared to the City of Ryde)
- higher percentage of persons in Macquarie Park and City of Ryde with higher educational qualifications, when compared to Greater Sydney, reinforcing the importance of Macquarie University to the local area
- a preference for urban living in a mix of medium density housing (32%) and higher density apartments (64%)
- an average occupancy rate of 2.0 persons per household in Macquarie Park, compared to 2.6 persons per household for the City of Ryde, reflecting preferences for and supply of studio, 1 and 2 bedroom dwellings.

These statistics suggest that the precinct's growing younger demographic profile is strongly influenced by a number of factors. These include the proximity of the university and the employment opportunities offered by the business park and shopping centre, the availability of higher density housing options and good access and proximity of rail and bus services. Equally, many of these locational and lifestyle factors are also attractive to the older demographic profiles of empty nesters, retirees and seniors.

Appendix C provides a summary demographic profile of the Herring Road precinct as part of Macquarie Park and provides some comparisons with the City of Ryde and Greater Sydney.

2.3 Existing landowners and land uses

There are a number of key landowners and existing uses located within the Herring Road precinct, as illustrated in Figure 5 and the photographs in Figures 6 to 12.

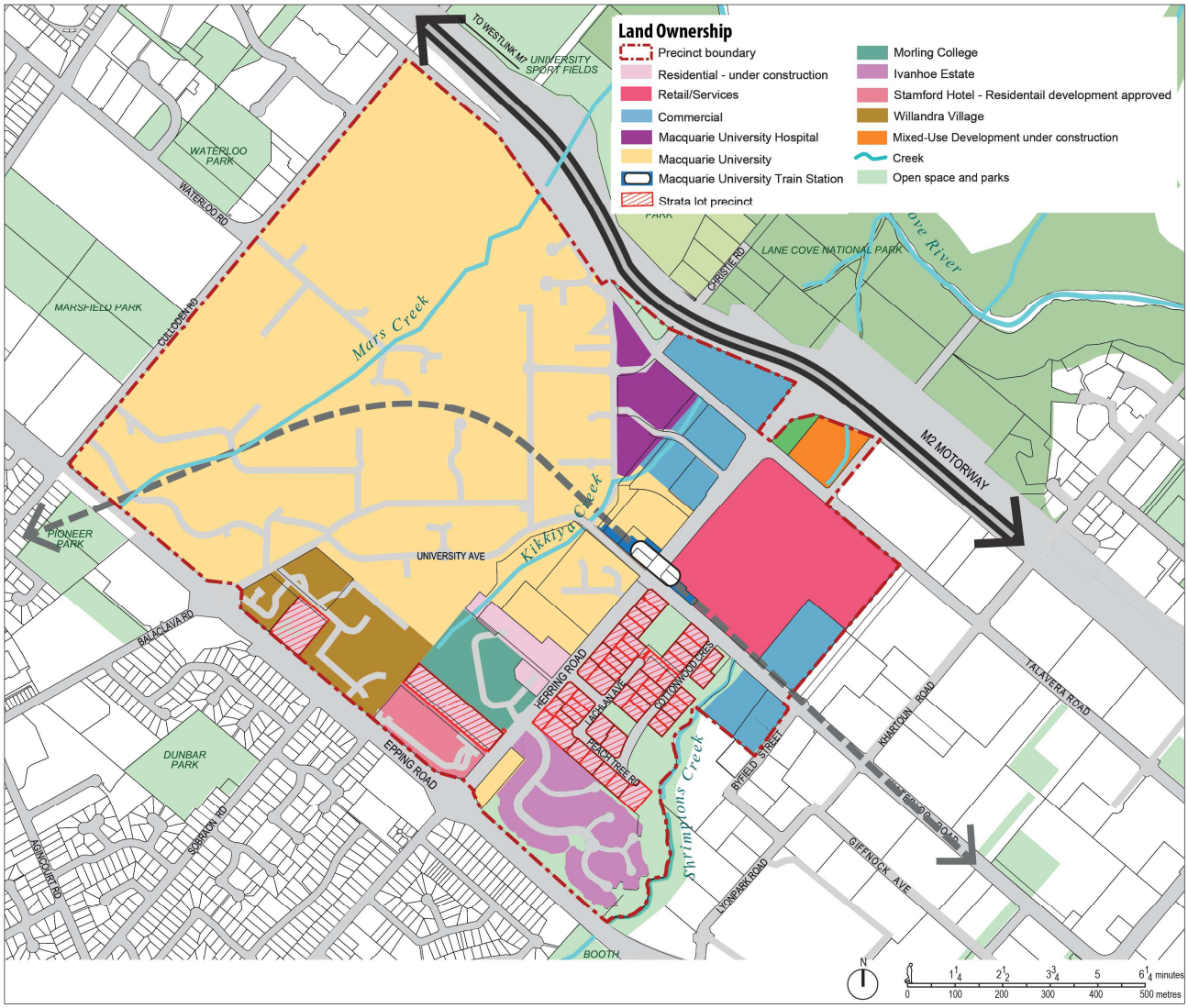

Figure 5 **Existing landowners and key uses**

Some of the key landowners in the Herring Road precinct are:

- Macquarie University
- AMP Capital (Macquarie Shopping Centre)
- Baptist Community Services (Willandra retirement village)
- NSW Housing and Land Corporation (Ivanhoe Estate)
- Macquarie University Hospital
- Goodman (business park sites)
- Morling College
- Stamford Hotels and Resorts
- Centuria (business park sites)

Figure 6 **Macquarie University campus Central Courtyard**

Figure 7 **Cochlear's commercial / research building within the university campus**

Figure 8 **Willandra Village retirement village owned by Baptist Community Services**

Figure 9 **Ivanhoe Estate, looking south east along Ivanhoe Close**

Figure 10 **Herring Road looking south towards Epping Road**

Figure 11 **Macquarie Shopping Centre and bus interchange**

Figure 12 **Macquarie University Train Station entrance on Herring Road**

2.4 Existing and approved built form

Urban character

An area's urban character can be described as the general size, scale, style, typology and use of existing development. The Herring Road precinct has a range of building types of variable age and quality that contribute to its urban grain and character:

- The largest and most dominant building type in the precinct is the Macquarie Shopping Centre, with its connected retail mall and car parking footprint
- Macquarie University, as the largest landowner in the precinct, provides a master planned campus of education and accommodation buildings designed into a landscape setting. These campus buildings range from larger developments such as the faculty buildings, the library, Macquarie University Hospital, colleges, the Australian Hearing Hub and the Cochlear building to smaller scale administration buildings and cottages
- Other distinct building types are the residential strata buildings located between Shrimptons Creek and Herring Road and the curvilinear building forms of the Ivanhoe Estate
- Finer grain buildings include the cottages in the Baptist Community Services retirement village, the Ivanhoe Estate townhouses and the University student accommodation buildings near Herring Road.

The aerial photograph in Figure 13 illustrates the wide variety of street block sizes, lot sizes, building uses and sizes that characterise the precinct.

Figure 13 **Existing diverse character of the precinct**

Major development approvals

A number of major development approvals have been granted which influence the future built form of the precinct.

- **Macquarie University** - The Macquarie University Campus Concept Plan approved on 13 August 2009 permits 400,000sqm of commercial floor space and 61,200sqm for academic uses, student housing and associated infrastructure and open space. The approval includes maximum building heights of between 72m and 108m for the sites adjacent to the Macquarie University Train Station. The maximum height of 108m is the highest maximum building height throughout the campus and is to allow for the construction of landmark tower buildings at the arrival point to the train station and university.
- **110-114 Herring Road -** On 26 September 2012 a Concept Plan and Stage 1 Project Application was approved for a mixed use residential, retail and commercial development at 110-114 Herring Road, Macquarie Park (corner of Herring Road and Epping Road). The Stage 1 Project Application includes the construction of four (of seven) buildings, landscaping, public domain and internal roads and services. Approved modifications increased the height of one of the buildings from 20 to 22 storeys, and the approved FSR from 2.13:1 to 2.28:1.
- **120 -128 Herring Road** - On 20 January 2011, a Concept Plan, Subdivision and Project Application was approved for 120-128 Herring Road. The development is currently under construction and comprises a mixed use residential and retail development of four 12-13 storey buildings and one 9 storey building.
- **84 - 92 Talavera Road** - On 15 March 2012, a mixed use development was approved by the JRPP for 84-92 Talavera Road, Macquarie Park. The development comprises four buildings, being two 8 storey residential buildings, one 8 storey serviced apartment building and one 9 storey serviced apartment building. This development is currently under construction and nearing completion.

As these approved projects are commenced and completed, they will introduce a significant change in scale, height and density of development in the precinct and demonstrate the need for the integrated approach to renewal provided by the Herring Road precinct proposal.

2.5 Existing access and movement

The Herring Road precinct and Macquarie Park are both well served by public transport, arterial roads and the motorway network.

Public transport - Rail

Macquarie University Train Station provides the Herring Road precinct with good access to the Sydney Trains network. The train station (shown in Figure 14) opened in 2009 as part of the Epping to Chatswood Rail Line (ECRL) which forms part of the Northern Line of the Sydney Trains network, as shown in Figure 15. In peak periods, four services per hour operate in each direction (inbound to the city and outbound to Epping or Hornsby) on the Northern Line.

Since 2009, the patronage for Macquarie University Train Station has increased annually, as shown in Table 1. Based on the daily station entries and exits the station ranks 26th on the Sydney Trains network.

Table 1 Macquarie University Train Station - Growth in patronage since ECRL opened in 2009

Year	Entries and exits/day	Station rank	Percentage growth
2009	10,980	43	-
2010	14,960	32	36.2%
2011	17,020	26	13.4%

Figure 14 **Macquarie University Train Station**

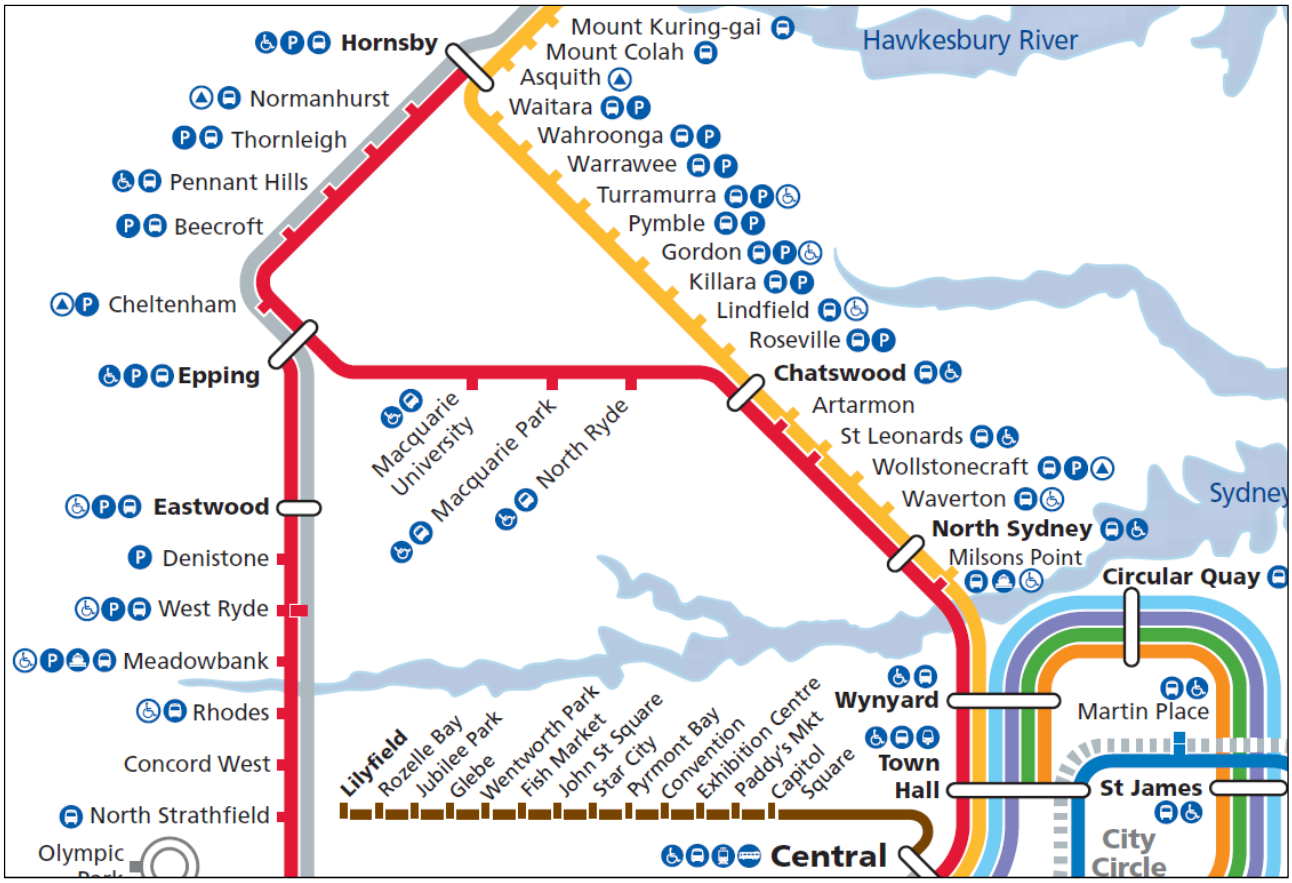

Figure 15 **Northern Line of Sydney Trains network**

The Herring Road precinct will benefit from the completion of the North West Rail Link (NWRL) in 2019/2020. NWRL represents the first stage of the NSW Government's vision for the rail network and its new single deck rapid transit network. At an estimated cost of $8.3 billion, the 23 kilometre NWRL will connect Cudgegong Road in the north-west with Epping. In addition, the 13 kilometre ECRL will be

upgraded for NWRL single deck trains to connect with Chatswood. Chatswood will become the major interchange for commuters on the NWRL and North Shore Line to access other employment hubs within the Global Economic Corridor.

The Environmental Impact Statement for the NWRL states that the project will:

- reduce travel times between the north-west and key employment destinations like Macquarie Park by up to 30 per cent
- run 12 trains per hour per direction during peak periods (one train every five minutes) and six trains per hour per direction off peak (one train every ten minutes)
- have eight carriages for each new single deck train and be capable of transporting up to 1,300 passengers
- replace many commuter bus trips to Macquarie Park.

The longer term vision for Sydney's Rail Future is for the NWRL to connect with the Bankstown line and Hurstville branch via a second harbour rail crossing. With the completion of the rapid transit network, Macquarie University Train Station could be serviced by up to 20 trains per hour per direction during peak periods (one train every three minutes).

Public transport - Buses

The Herring Road precinct is serviced by 27 different bus routes which provide connections in all directions across the Sydney Metropolitan Area, as illustrated in Sydney Buses Map in Figure 17 and the image of buses approaching the bus interchange in Figure 16.

Figure 16 **Buses approaching the Macquarie Centre bus interchange**

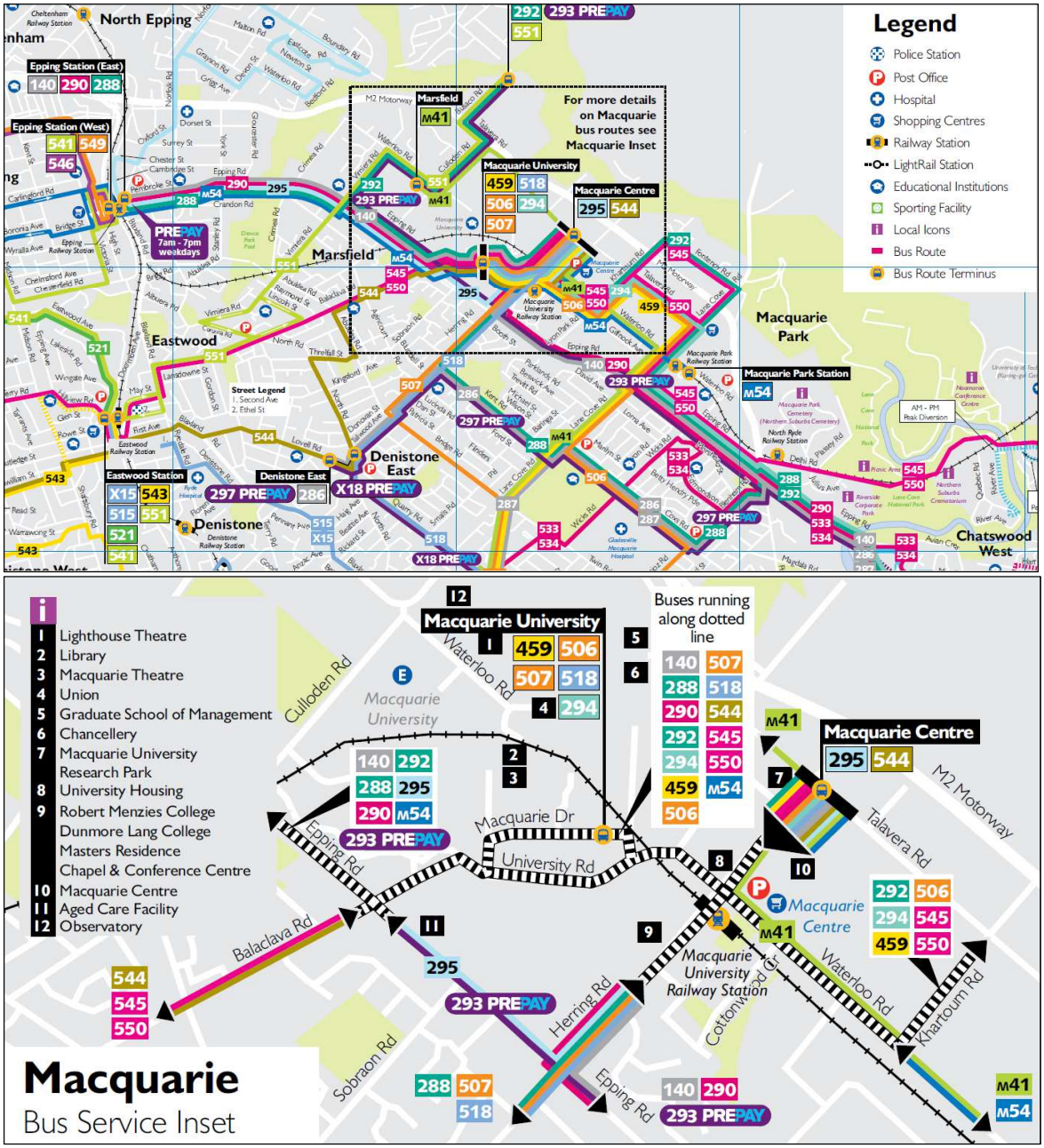

Figure 17 **Sydney Buses Map – Western Region Guide**

Transport Accessibility and Management Plans (TMAPs) were undertaken for Macquarie Park in 2002 and for Macquarie University in 2009. Both TMAPs assumed that an increase in bus services and bus priority measures would be capable of supporting a greater population of workers and residents in Macquarie Park and the desired shift in mode share from cars to public transport, and suggested the need to prioritise bus movements over cars and to better integrate the Macquarie Centre Bus Interchange into the wider precinct.

Access network

A network of motorways, arterial roads, local streets and other connections currently provide access to and within the Herring Road precinct.

M2 Motorway

The M2 Motorway is located along the north-eastern edge of the Herring Road precinct. The M2 is a major motorway connection serving the north-west of Sydney. An upgrade of the motorway between Windsor

Road, Baulkham Hills and Lane Cove Road, Macquarie Park aims to reduce congestion, increase the signed speed limit and improve access.

Specific upgrades around the Herring Road precinct include:

- a new Herring Road westbound off ramp from the M2 (see Figure 18)
- a new Christie Road eastbound on ramp to the M2
- an additional westbound lane from Lane Cove Road to Beecroft Road
- an additional eastbound lane from Pennant Hills Road to Lane Cove Road and
- Talavera Road widened to two lanes in each direction, between Christie Road and Alma Road.

Figure 18 **Herring Road / Talavera Road intersection, with the M2 off ramp beyond**

Epping Road

Epping Road is a key arterial road that runs perpendicular to Herring Road at the southern edge of the precinct. Epping Road has three median separated lanes in each direction and a signed speed limit of 80 km/hour. The eastern approach to Herring Road has two additional right turn lanes and one additional left turn lane. The western approach to Herring Road has one additional right and one additional left turn lane.

Local streets

The Herring Road precinct is currently served by a limited network of existing streets, laneways, driveways and connections, as illustrated in Figure 19. Within the Herring Road precinct, Herring Road, Waterloo Road Talavera Road and Epping Road are defined as collector roads or primary streets.

- **Herring Road** is the key access street within the precinct, connecting Talavera Road to Epping Road. Herring Road has two median separated lanes in each direction and a speed limit of 60 km/hour. Additional turning lanes are provided at signalised intersections at Talavera Road, University Avenue / Waterloo Road and Epping Road. A roundabout controls traffic movements between Herring Road and Ivanhoe Place. Herring Road also has non-signalised intersections with Innovation Road and Windsor Drive. Private driveways on both sides of Herring Road provide residents of strata-titled buildings, university colleges and the Stamford Grand North Ryde with access.
- **Waterloo Road** intersects with Herring Road at the entrance to Macquarie University. Waterloo Road has two median separated lanes in each direction with a speed limit of 60 km/hour. On approach to

Herring Road, Waterloo Road has three westbound lanes – one right turn, one shared through and right turn and one left turn. On approach to Herring Road, University Avenue has three eastbound lanes – one right turn, one through and one shared through and left turn. Westbound, University Avenue has two lanes.

- **Talavera Road** runs perpendicular to Herring Road at the north eastern edge of the precinct. It has two median separated lanes in each direction east of Herring Road and a speed limit of 50 km/hour. At the intersection with Herring Road, there is an additional left turn lane and bus only right turn lane. West of Herring Road, Talavera Road is being widened as part of the M2 upgrade and now has two median separated lanes in each direction.

Figure 19 **Existing street and access network**

Car parking requirements

The City of Ryde's DCP 2011 current car parking requirements for mid density (multi dwelling housing) and high density residential development (Residential Flat Buildings) are shown in Table 2.

Table 2 Existing residential parking requirements - City of Ryde DCP 2011

Dwelling Type	Mid density residential (Multi dwelling housing)	High density residential (Residential Flat Buildings)
1 bedroom	1 space	0.6 to 1 space
2 bedroom	1 space	0.9 to 1.2 spaces
3 bedroom	2 spaces	1.4 to 1.6 spaces
Visitor	1 visitor space per 4 dwellings	1 visitor space per 5 dwellings

Pedestrian & cycle networks

The existing Macquarie Park street network prioritises cars over people. Along the one kilometre length of Herring Road, there are only four signalised crossings for pedestrians. Between Epping Road and Waterloo Road, a distance of 600 metres, there are no legal pedestrian crossings. The footpaths are narrow and regularly interrupted by private access driveways.

The precinct currently has limited connections for pedestrians and cyclists to the Macquarie Shopping Centre and Macquarie University. Although there are three road frontages, Herring Road is the sole clear access point to the shopping centre. It is possible for pedestrians and cyclists to enter the shopping centre from Waterloo Road, but only via the car park. The primary access point from Herring Road to Macquarie University is via University Avenue, with private properties and student colleges limiting east-west connections.

The key pedestrian and cycle corridor along Shrimptons Creek (illustrated in Figure 20 and 21) is well utilised. This is despite some safety concerns regarding adequate lighting and limited passive surveillance caused by trees and vegetation blocking sightlines from residential buildings and both Epping and Waterloo Roads.

Figure 20 **Shrimptons Creek corridor looking north**

Figure 21 **Shrimptons Creek corridor looking south**

In the wider context of Macquarie Park the cycle network connects with the adjacent suburbs of North Ryde, Ryde, Denistone East and Marsfield, as shown in Figure 22.

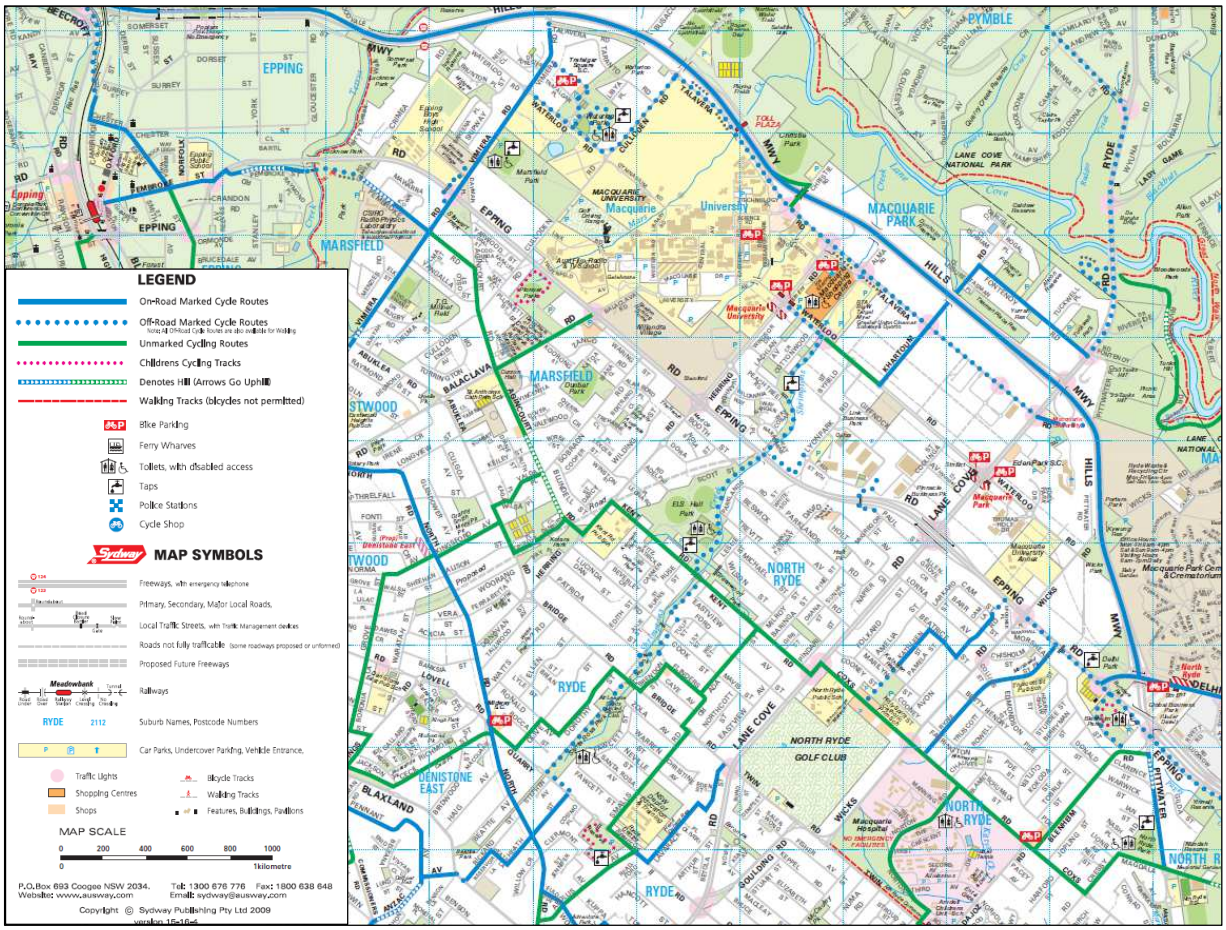

Figure 22 **Extract from City of Ryde bike map (2009)**

The City of Ryde's DCP 2011 contains provisions for bicycle parking which are designed to:

- Provide adequate bicycle parking in new residential and commercial buildings
- Provide adequate end of trip facilities such as showers and change rooms
- Ensure bicycle parking is consistent with Safer by Design principles and Australian Standards
- Minimise conflict between bicycle parking and access and vehicles.

2.6 Existing landform and public open space

The precinct is gently undulating with high points along Epping Road and low points towards the Lane Cove River to the north. Herring Road runs along one of the ridges and key viewpoints are from the high points on Epping Road and from Herring Road eastwards along Waterloo Road and Talavera Road.

The key features of the precincts topography are the low-lying creeks, with Shrimptons Creek, Kikkiya Creek, often referred to as 'University Creek' (shown in Figure 23) and Mars Creek passing through the precinct in a south-west to north-east direction and towards the Lane Cove River.

Figure 23 **Kikkiya Creek looking from the university towards Morling College**

This undulating topography and the resulting flooding and overland flow paths from these creeks are illustrated in Figures 24 and 25. Whilst the flood risk areas present a constraint to development, they are relatively contained within the precinct.

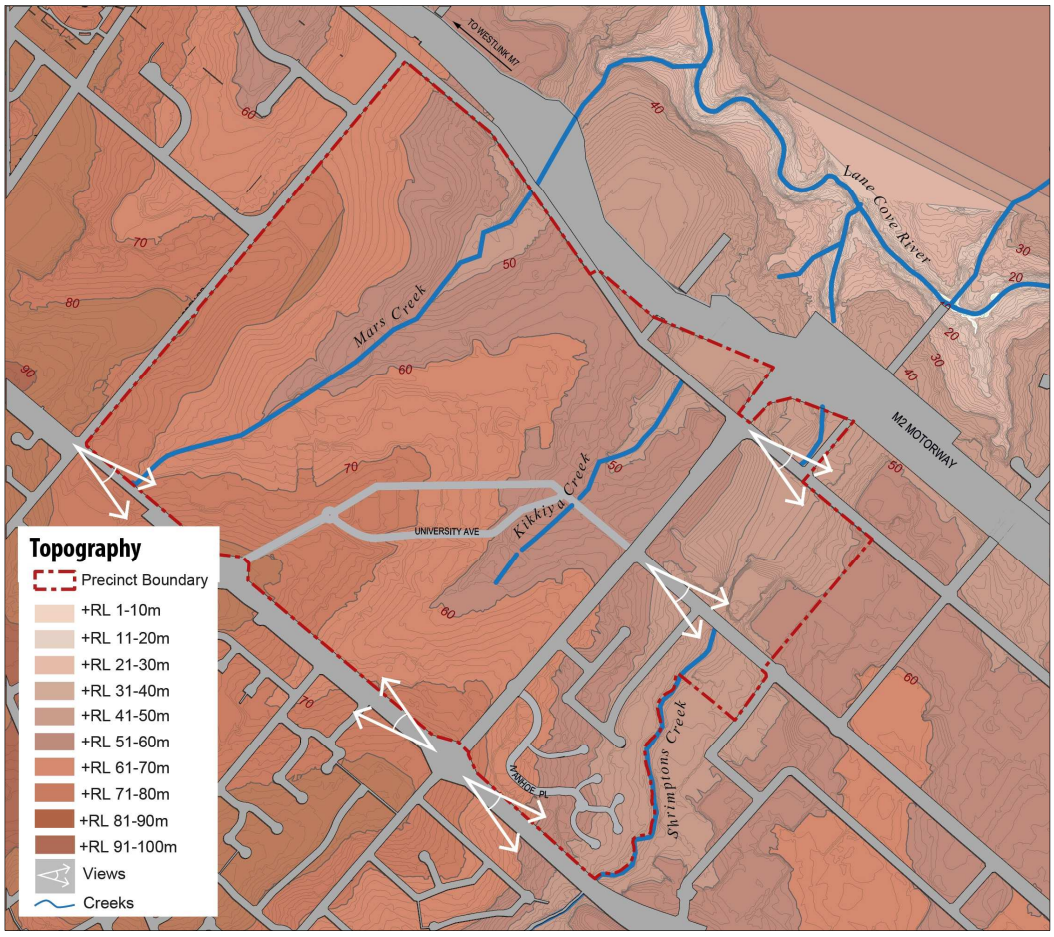

Figure 24 **Illustration of the undulating landform of the precinct**

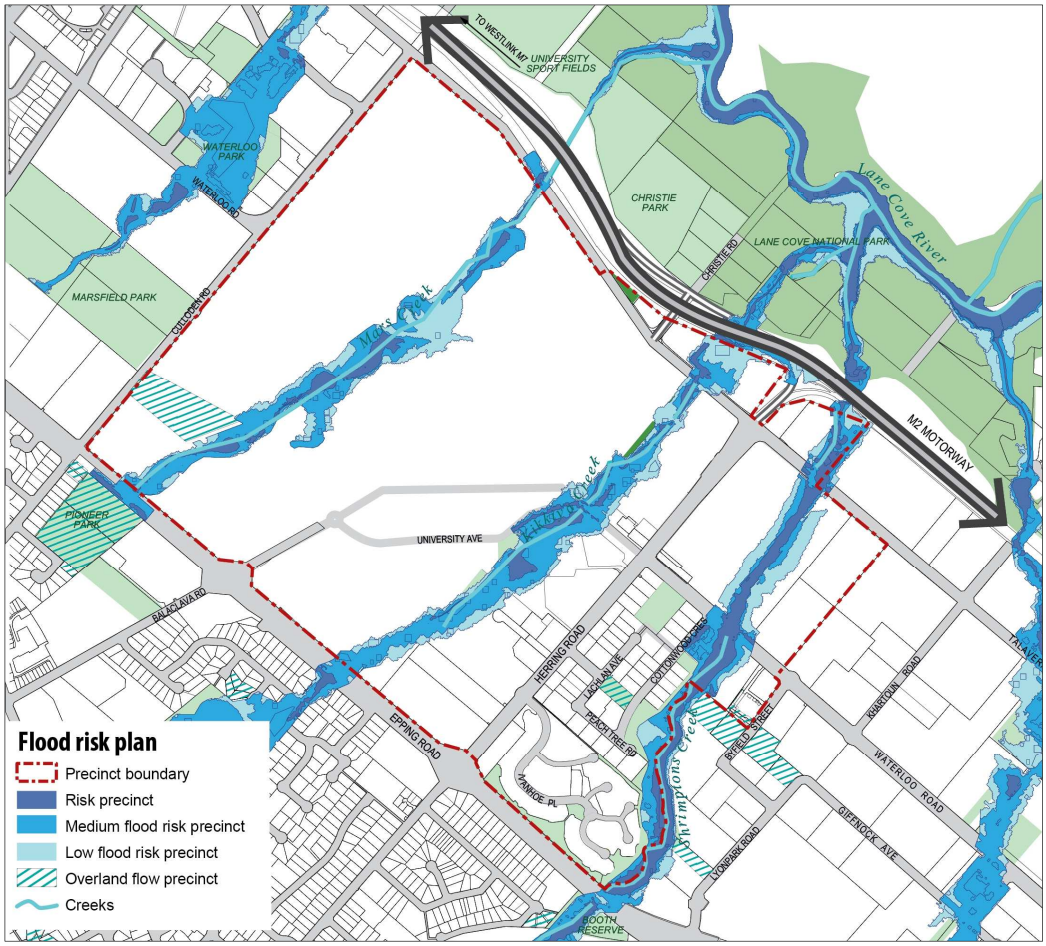

Figure 25 **Illustration of the flood risk plan for the precinct**

Existing open space

The City of Ryde publicly exhibited an Integrated Open Space Plan (IOSP) in 2012. The IOSP establishes a framework for key regional and local recreation linkages and open space. The primary open space framework combines recreational and natural corridors and spaces. To complete the framework, the city's existing creek and river corridors are connected to town and neighbourhood centres extending along natural catchment boundaries following streets and linking to currently unconnected parks. This framework is to be supplemented by a green grid of canopied streets that provide the principal walking and cycle routes between centres, parks and corridors.

The IOSP reiterates the importance of the existing local parks and creek line open spaces in the Herring Road precinct, such as the local community park at Wilga Park (shown in Figure 26) and Elouera Reserve (shown in Figure 27). The plan also identifies a deficit of public open space in the Herring Road precinct.

Figure 26 **Wilga Park View looking south west with Shrimptons Creek to the left**

Figure 27 **Elouera Reserve looking south towards Lachlan Avenue**

Some key opportunities to address the provision of open space in the Herring Road precinct are to:

- better connect regional open space links along existing creek corridors (e.g. Shrimptons Creek)
- improve connections south of Epping Road, through the precinct and north across the M2 to Lane Cove National Park
- provide connections to the Shrimptons Creek corridor from the business park to the south-east
- better connect Shrimptons Creek with new facilities and local parks in the precinct
- improve access to and embellish existing areas of local open space
- as redevelopment occurs, provide new parks and local open spaces
- ensure the areas of open space within the Macquarie University campus are better connected and more accessible to the train station and to Herring Road.

3 The precinct proposal

This section provides an overview of the proposal for the Herring Road Urban Activation Precinct. It summarises the vision for the precinct, the proposed land uses, its urban structure and built form, its movement and access networks and its spaces and places.

3.1 Vision and principles

By 2031, the Herring Road precinct will transform into a vibrant and walkable transit-oriented centre, vital to the evolution of Macquarie Park.

Herring Road will increase the supply and mix of housing to ensure more people can benefit from the diversity of Macquarie Park's local job market and world-class education opportunities. Building on its existing business, retailing and educational success, Herring Road will attract more people to live, study and work in the area.

Connected, walkable and accessible to all, Herring Road will provide activities and destinations day and night, seven days a week. Excellent transport infrastructure will provide easy access to Sydney's metropolitan jobs and city culture.

A more connected street structure will focus development and activity around public transport, shops and services and transform Herring Road into an attractive and comfortable place for people. The precinct will provide sustainable higher density living convenient and accessible to local shops and services, recreational facilities, community facilities and local and regional parks.

Quality design of development and public space will improve the experience and comfort for people walking, cycling and using public transport and provide a range of public places from parks, playgrounds and creek-side walks to outdoor dining areas, meeting places and active streets.

An illustrative master plan is depicted at Figure 28 for the Herring Road precinct, whilst Figures 29 to 36 provide artist's impressions of proposed streets and places within the precinct.

Figure 28 **Illustrative master plan for the Herring Road precinct**

The key elements of the Herring Road precinct vision are:

Uses and activities

- a mix of land uses including residential, commercial, retail, education, medical, entertainment, community facilities and open space
- a quality medium to high density urban community with up to 5,400 new homes by 2031
- residential areas linked to public transport, the shopping centre and open space
- active uses along Herring Road including outdoor dining

Movement network

- new streets to better connect areas within the precinct and to surrounding areas
- easier connections to Macquarie University Train Station, bus stops and open space
- convenient, pleasant and safer pedestrian and cycle access connecting residential areas with the university, shops, open space and public transport
- more pedestrian crossings for Herring Road
- a new regional cycle path connecting Waterloo Road to Epping Road as part of a regional cycle link that connects Herring Road with Eastwood, West Ryde and Denistone

Built form

- maximum heights and densities focused closest to the train station, university and shopping centre where they can benefit the most from public transport

- density increased in areas with good access to public transport, considered to be within 800m or 10 minutes walking time from the train station
- the precinct's key activity streets and precinct entry points defined with taller buildings between 45m and 120m (14-34 storeys)
- mixed uses that will result in a range of building types and activities
- limit the overshadowing of public open space and maximise building separation to provide adequate residential amenity
- new development facing onto public streets

Open space

- better links to Lane Cove National Park and other regional open space networks
- improved links along Kikkiya Creek and Shrimptons Creek corridors
- improved existing parks, such as Wilga Park
- new local parks and public spaces
- new pedestrian networks integrated with existing and new open space

Herring Road

- Herring Road as the key activity spine connecting the train station, bus interchange, shopping centre, university and residential areas
- improved Herring Road intersections, including replacement of the Ivanhoe Place and Dunmore Lang College roundabout with a signalised crossing
- wider paths, more active street frontages, improved street landscaping, convenient parking and a dedicated cycleway

Figure 29 **Looking north along Herring Road**

Figure 30 **Looking south across Herring Road / Ivanhoe Place intersection**

Figure 31 **Looking south along proposed Herring Road cycleway**

Figure 32 **Looking north west from Shrimptons Creek Corridor towards Wilga Park**

Figure 33 **Illustrative vision looking west from Shrimptons Creek across the proposed new park**

Figure 34 **Looking west across Wilga Park**

Figure 35 **Looking south on University Avenue from western entrance of the train station**

Figure 36 **Looking west on Waterloo Road towards Macquarie University**

3.2 Mixed land use

A mix of land uses is needed to create and sustain busy streets, active spaces, successful businesses and well used facilities. To cater for residential population growth and the demand increases for businesses and other uses over time, land use controls will need to be flexible enough to allow change. The indicative structure plan (shown in Figure 37) illustrates a mix of land uses and activities possible for the Herring Road precinct, which are proposed to be delivered using the 'B4 Mixed Use' zone. The proposal encourages redevelopment for medium to high density housing that could achieve up to 5,400 new dwellings by 2031.

The future commercial, retail, residential, entertainment, medical, community and education uses attracted to Herring Road can build on the existing local attractors of Macquarie University, the Macquarie Shopping Centre, Macquarie Park employment in a location that benefits from good transport accessibility.

The proposal encourages redevelopment for medium to high density residential and mixed uses, with up to an estimated 5,400 new dwellings achievable by 2031 across the precinct.

Active uses such as local shops and cafes are encouraged along both Herring Road and Waterloo Road. The activation of Herring Road can produce a series of connected destinations to encourage pedestrian and street activity. Key to the activation of Herring Road is quality public spaces to provide gathering places for residents, workers, students and visitors to meet.

Recreation and environmental conservation areas along Shrimptons Creek, Kikkiya Creek and in the university will continue to provide a mix of active and passive recreation opportunities for residents, workers and students. Opportunities exist to provide future community facilities in areas such as the town centre and the Ivanhoe Estate.

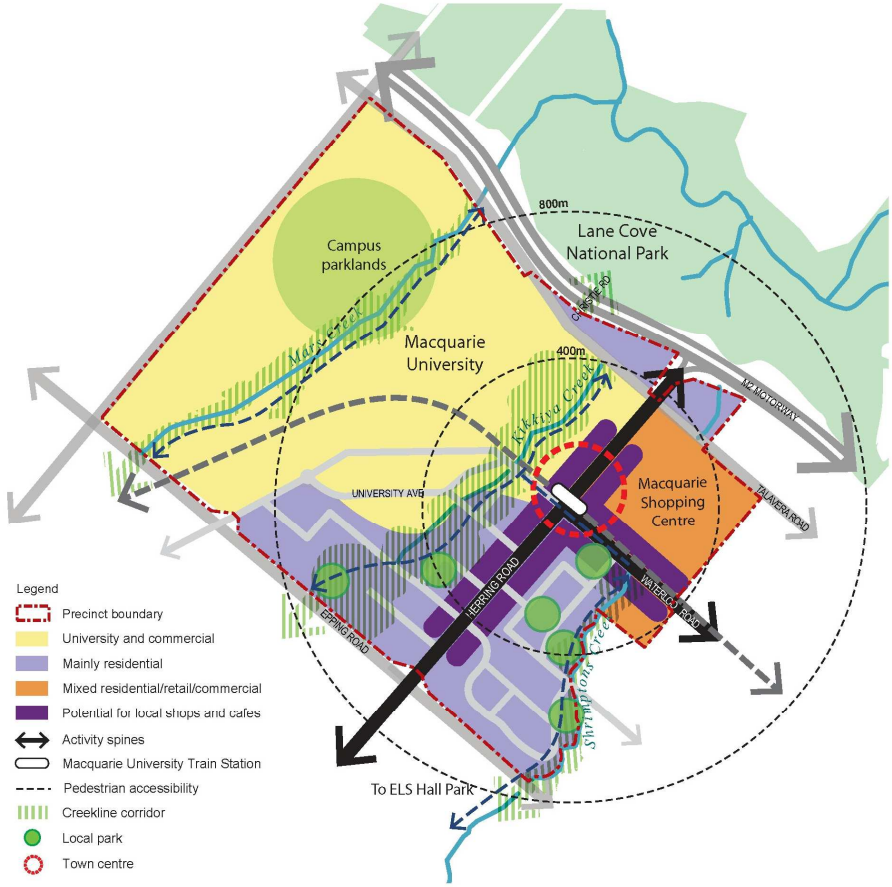

Figure 37 **Indicative structure plan for the Herring Road precinct**

3.3 Access and movement network

The Herring Road precinct and the broader Macquarie Park corridor experiences traffic congestion particularly during the morning peak period. This is a result of regional transport issues, local capacity constraints on intersections, and because many residents, workers and students currently rely on their own cars to travel. This places pressure on the existing street network and street parking.

To address these issues and ensure that additional growth is sustainable, a number of transport initiatives are proposed that cover:

- Transit-oriented development
- Active transport
- Better street connections and intersections
- Pedestrian and cycle network improvements
- Bus network and bus interchange improvements
- Residential car parking.

Implementing transit-oriented development

Integrated land use and transport planning is a key element of the 'Balanced Growth' chapter of the Draft Metropolitan Strategy for Sydney to 2031. The Department considers that the Herring Road precinct presents an excellent opportunity to build upon existing land use and movement patterns and to create a transit-oriented development focused on the existing train station and bus network.

For the Herring Road precinct, the implementation of integrated land use and transport planning and transit-oriented development is a strategy that can:

- increase the use and viability of public transport investment, matching frequent, fast, reliable public transport services and capacity with density of development
- increase residential densities in existing transport corridors to create a more connected and compact region that improves access opportunities to a greater range of metropolitan jobs and city culture
- enable mixed-use centres and residential neighbourhoods that provide opportunities for retail, employment, commercial and civic uses and a mix of medium to high density housing located within easy walking distance to transport
- promote 'active transport' to achieve shifts in transport modes that increase trips by public transport, increase cycling trips / walking trips, reduce and regulate parking and reduce 'car as driver' trips
- develop neighbourhoods with a mixed use and residential character that integrate local services and connect communities with a network of streets and paths that promote walking and cycling

Active transport

Analysis of the 2011 Census Journey to Work (JTW) data undertaken in the transport strategy (refer to Appendix F) reveals significant statistics regarding travel patterns for existing residents that support a transit-oriented development strategy for Herring Road.

The JTW analyses show that in 2011, 24% of existing residents in the Herring Road precinct either walked or cycled to work. This figure is significantly higher than many other existing centres and urban renewal areas. According to TfNSW, the highest figure is 39% for the City of Sydney and the lowest 10% for outer South West Sydney. In the Herring Road precinct, a further 23% travelled to work by rail and 9% by bus.

These statistics demonstrate that 24% of local Herring Road residents already use 'active transport' modes to travel to work and benefit and significantly from the close proximity of diverse local employment opportunities provided by the university, the shopping centre and the business park.

The Department considers that the Herring Road precinct already demonstrates many characteristics of a transit-oriented development and a live-work community. This in turn creates a robust platform for future increases in residential population and mixed-use development activity within the precinct.

Better street connections and intersections

New street connections seek to facilitate better traffic circulation in the precinct, distribute traffic movements to the main road network and improve pedestrian and cycle connectivity and accessibility. These proposals are generally consistent with the intent of the street network and open space network structure plan and objectives.

The proposal includes an improved network of existing and new streets and pedestrian / cycleway connections that seek to:

- better connect the different areas within the precinct
- better connect the precinct to adjacent neighbourhoods and other areas within Macquarie Park
- improve traffic circulation and management in the local area
- introduce more connections in the street network that improve local accessibility for pedestrians, cyclists and vehicles and reduce the number of cul-de-sacs
- optimise the access opportunities created by the redevelopment of key sites to create a better connected street network
- improve accessibility of pedestrians and cyclists to public transport networks (rail and bus)
- improve east-west connections across Herring Road for pedestrians, cyclists and vehicles
- improve access to local open space within the precinct, to other areas within Macquarie Park and to adjacent neighbourhoods
- reinforce the Macquarie Park street hierarchy principles (as defined in Ryde DCP 2011)

Specific street and intersection proposals for the Herring Road precinct are set out in the following sections and Figure 38 illustrates the proposed new streets.

Transformation of Herring Road

As the precinct's primary north-south connection and main activity spine, Herring Road will be the focus of significant future change. Through a combination of residential and mixed use redevelopment, public space improvements and better traffic management, Herring Road is proposed to become a more active, more pedestrian friendly and better landscaped street.

To improve pedestrian amenity on the western side of Herring Road, the footpath is to be widened and landscaped. This can facilitate increased street level activity for cafés, restaurants and shops, etc. Pavement widening can also facilitate the introduction of some parallel car parking bays, which can benefit the viability of future retailing and café / dining type uses.

At its junction with Waterloo Road, the transformation of Herring Road include activating the ground floor with increased street level activity such as shops and cafes, better connections between existing open spaces (Elouera Reserve / Shrimptons Creek) and proposed civic spaces (station square), wider pavements and more street landscaping.

Herring Road intersections

The transport strategy recommends the following for the key Herring Road intersections within or connecting to the precinct:

- **Herring Road / Epping Road** - This intersection currently operates beyond capacity. The scope of improvement required will be assessed as part of wider strategic planning by Transport for NSW
- **Herring Road/Ivanhoe Place** - It is proposed that this roundabout be upgraded to a four way signalised intersection. Adding traffic signals will increase capacity, provide greater control of movements in peak hours and the opportunity to introduce new pedestrian crossings
- **Herring Road/Dunmore College** - This proposed 3 way signalised intersection is consistent with the Macquarie University Concept Plan and would be provided when the Dunmore College site is redeveloped. The new intersection will control traffic flow from the university and also provide a controlled pedestrian crossing point
- **Herring Road/Waterloo Road** - The future form of this intersection will need to reflect any changes to access for the bus interchange and the shopping centre. The operation of the signals will also need to reflect any changes in bus priority or bus movements to ensure bus delays are minimised
- **Herring Road/Talavera Road** - As one of the links to the M2, this intersection must maintain capacity to cater for motorway movements, especially any future bus movements. The intersection will also need to reflect any changes to the interchange and Macquarie Centre access in the future.

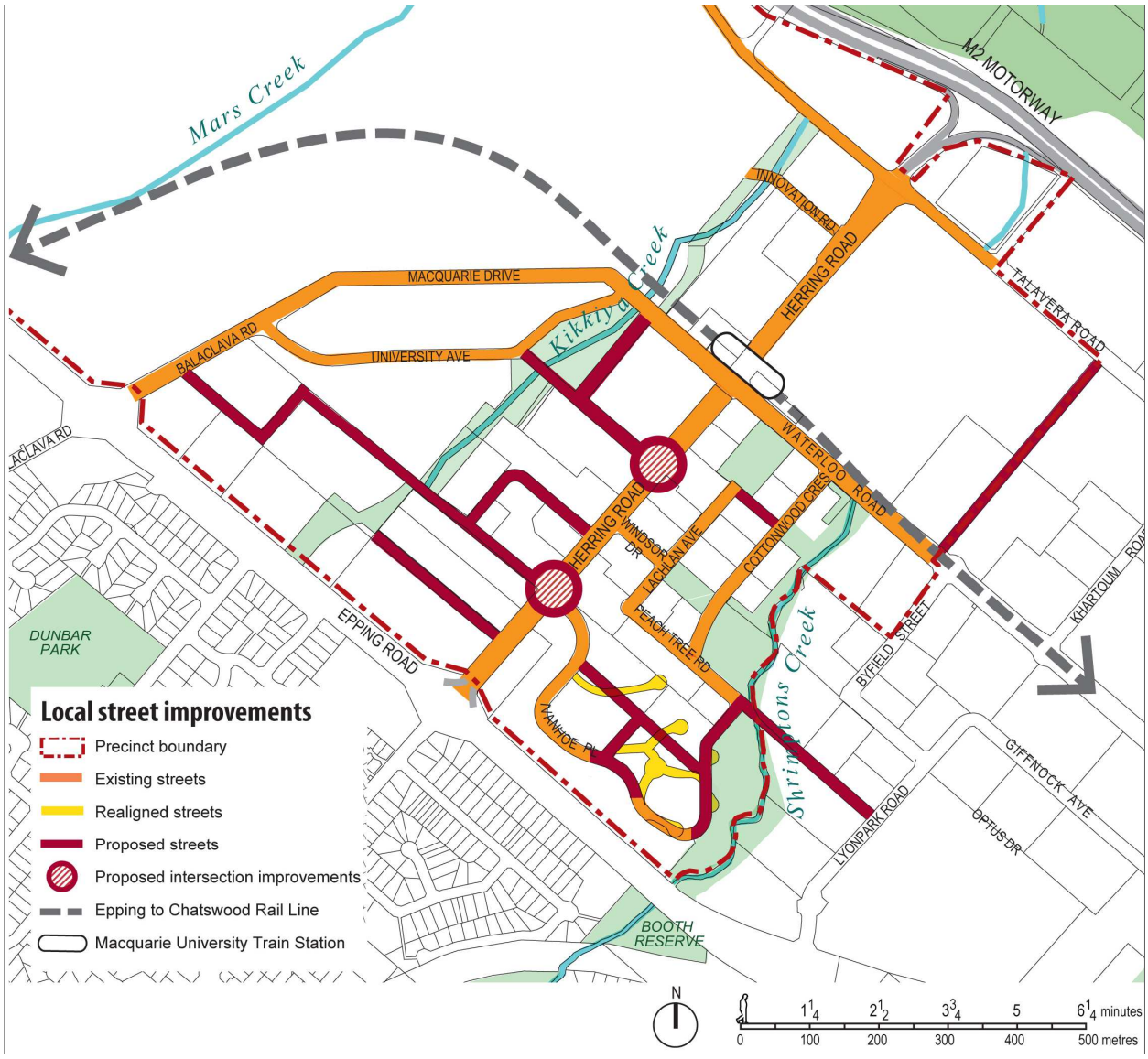

Figure 38 **New streets and intersections**

New local street connections east of Herring Road

Proposed new local streets are illustrated in Figure 38 and described below:

- **Peach Tree Road to Ivanhoe Place** - This important new street proposes to connect Cottonwood Crescent with Ivanhoe Place. The proposal can create a beneficial circulation route and provide an alternative local traffic access through what are existing cul-de-sacs. The new street can also improve the passive surveillance of the south-east corner of the Ivanhoe Estate and the Shrimptons Creek open space corridor.
- **Street and bridge between Peach Tree Road to Lyonpark Road** - This proposed one way (west to east) street for vehicles from Peachtree Road to Lyonpark Road, bridging over the Shrimptons Creek corridor. The new street can benefit local residents by providing an alternative vehicular egress in an easterly direction, whilst preventing the east to west movement of business park related traffic. The proposed connection would allow for the two way movement of pedestrians and cyclists. Connecting this new street with Lyonpark Road can provide a link with Optus Drive and Giffnock Avenue. Implementation of the street / bridge connection to Lyonpark Road will require the business park properties on the eastern side of Shrimptons Creek to redevelop in a form that integrates a new public street.
- **Ivanhoe Estate streets** - The Ivanhoe Estate street network is proposed to be partly reconfigured to remove the existing cul-de-sac streets but potentially retain the alignment of Ivanhoe Place. The proposals seek to improve local street connectivity, particularly for pedestrians and cyclists and link with the Peach Tree Road to Ivanhoe Place and Peachtree Road to Lyonpark Road proposals.
- **Lachlan Avenue to Cottonwood Crescent** - This new short street proposes to connect Lachlan Avenue with Cottonwood Crescent, just to the south of Elouera Reserve. This one-way (west to east) street can improve local connections for residents and also improve links between Elouera Reserve and Shrimptons Creek.
- **Waterloo Road to Talavera Road** – This proposed new north south street completes a connection to east of the shopping centre, as proposed by the City of Ryde and located partly inside and parallel to the precinct boundary.

New local street connections west of Herring Road

- **Herring Road to Balaclava Road** - This new east-west street proposes an important connection between Herring Road and Balaclava Road. The new street commences at the proposed new signalised intersection with Herring Road and Ivanhoe Place (the existing roundabout), continues through land owned by Morling College and then along the property boundary between BCS land (Willandra Village) and Macquarie University and connects with Balaclava Road via BCS land. This proposed new two-way street can provide a valuable secondary connection for local traffic circulation and present opportunities for other new and existing streets to connect with it as sites redevelop.
- **Macquarie University campus / Dunmore College** - New streets that better integrate the Macquarie University campus with Herring Road already form part of Macquarie University's approved Concept Plan. The Herring Road precinct proposal supports these new streets and connections, specifically the new streets that frame the development site created by the future renewal of the Dunmore College site, the connection with Herring Road at a new signalised junction and the connection with University Avenue with a future bridge over Kikkiya Creek.
- **Local streets - Morling College, BCS and other development sites** - As precinct redevelopment sites commence, opportunities will arise for new streets, pathway and cycleway connections to better design and integrate new development into the wider street network. This applies to both the completion of existing approved development projects and to new development projects.

Bus network and bus interchange improvements

The Herring Road precinct transport strategy considered a number of ways in which bus operations could improve over time to enable greater future capacity and amenity.

Short to medium term improvements

In the short term, the general amenity, visual appearance and utility of the existing bus interchange could be improved and the allocation of stops and stands in the precinct optimised. Herring Road and Waterloo Road bus stops could also be upgraded to provide full bus shelters and real time information.

TfNSW advises that bus service levels are continually reviewed and that bus services may be altered prior to the introduction of the NWRL in 2019. Revisions to bus timetables are made as required and based on development in the area and changes in patronage. TfNSW will continue to monitor and if necessary refine bus services to the Herring Road precinct, including those serving Macquarie University Train Station, Macquarie Shopping Centre Bus Interchange and Macquarie University.

TfNSW propose to undertake a broader Macquarie Park transport study. This study will be based on existing and forecast demand and factor in any redeployment of bus services for the whole of the North West Region, prior to the opening of the North West Rail Link.

Longer term improvements

Bus services will need to play a major role in accommodating future public transport growth in Macquarie Park. To accommodate projected commercial, residential and education growth, a significant upgrade of the existing bus interchange at Macquarie Shopping Centre may be required (refer to Figure 39).

An upgraded bus interchange has the potential to:

- provide capacity for more bus services
- create a better integrated transport interchange, with direct links to the rail station and links to the light rail terminus, should the Western Sydney Light Rail proposal progress
- significantly improve pedestrian connectivity and amenity between Macquarie Shopping Centre and Macquarie University
- improve the continuity of street activity along Herring Road

TfNSW advises that a significant upgrade of the existing bus interchange would need to be considered as part of its assessment for priorities in the government's Transport Access Program.

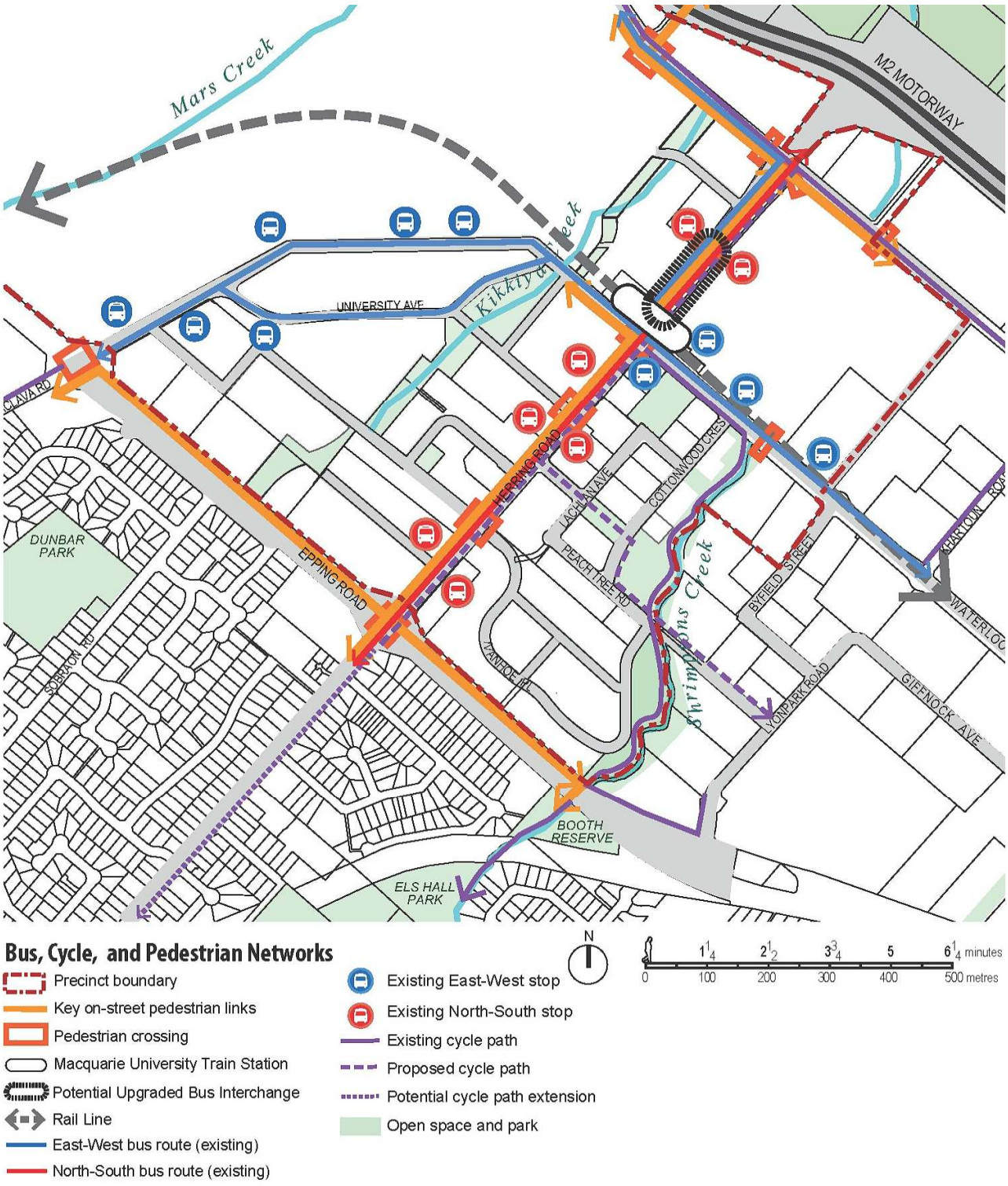

Figure 39 **Proposed bus, pedestrian and cycleway network improvements**

Pedestrian and cycle network improvements

The proposed improvements to the pedestrian and cycle network can provide a more connected, legible and safer environment. Many of these proposed improvements listed below and will be achieved in conjunction with the implementation of proposed new streets, illustrated in Figure 38.

- *Herring Road* – The transformation of Herring Road by improving the pedestrian and cycleway connections between Epping Road with Talavera Road can build upon its role as the community's key north-south urban activity spine. Two new signalised intersections on Herring Road proposed at Macquarie University (south of University Avenue) and Ivanhoe Place can reduce the distance between

signalised intersections to a maximum of 250 metres and allow pedestrians and cyclists to cross Herring Road more safely and in more locations.

- *Shrimptons Creek* - This creekline corridor is a key open space and riparian link that runs north-south through the precinct from the suburb of Ryde in the south to Lane Cove River to the north. Within the precinct, the larger section of this creek is a riparian corridor and the remaining section is within a culvert beneath the shopping centre. Opportunities exist to improve the environmental quality of the creek, improve the pedestrian and cycleway amenity, improve safety of the creek corridor with better lighting and sightlines and make greater active use of Wilga Park as a sports focused space.
- *Kikkiya Creek* – This creekline corridor is a key open space and riparian link that runs north-south through the precinct from the suburb of Marsfield in the south via Research Park Drive and Christie Road to Lane Cove River to the north. Opportunities exist to extend the creek line corridor connection towards Epping Road in the south, integrate with creek line regeneration proposals that form part of Macquarie University's Concept Plan and other approved projects, integrate and connect to new parks and introduce a shared pedestrian path / cycle path along the corridor.
- *Cottonwood Crescent – pathway extension* - This existing north-south street runs from Waterloo Road in the north, past the western edge of Wilga Park and connects to Peachtree Road. Through the potential development of residential sites on Peach Tree Road and of the Ivanhoe Estate, this connection could be extended further south as a pedestrian link to Epping Road.
- *Lachlan Avenue connection* - This existing north-south street runs from Waterloo Road in the north, past Quandong Reserve and connects to Peachtree Road. Through the potential development of residential sites on the corner of Lachlan Avenue and Peachtree Road and of the Ivanhoe Estate, a shared pedestrian cycle path could connect the corner of Lachlan Avenue with Ivanhoe Place. This short link has the potential to significantly improve local connectivity, especially if the Peach Tree Road to Lyonpark Road (bridge and street) connection is implemented.
- *Herring Road to Lyonpark Road connection* – There is potential to establish a significant new east-west road and on-street cycleway connection between Lyonpark Road and Herring Road. This cycleway would form part of the new street proposed to link Lyonpark Road to Peach Tree Road across Shrimptons Creek, then continue on-street around Wilga Park, then head west through Quandong Reserve, over Lachlan Ave, into Windsor Drive and connect with the proposed new two way cycleway on Herring Road.
- *Epping Road* – This arterial road forms the southern edge of the Herring Road precinct. It has the potential to provide an important east-west tree lined pedestrian path that can connect Shrimptons Creek with Herring Road, Kikkiya Creek and Balaclava Road.
- *Waterloo Road and University Avenue* – At its junction with Waterloo Road, the transformation of Herring Road will need to integrate with proposed improvements to Waterloo Road and University Avenue. Potential improvements include increased street level activity, better connections between existing open spaces (Elouera Reserve / Shrimptons Creek) and proposed civic spaces (station square) wider pavements and more street landscaping.
- *Herring Road to Macquarie University* – As part of the design development of the Macquarie University Concept Plan, an opportunity exists to achieve a shared pedestrian cycleway link between Herring Road and Macquarie University, located adjacent to the bus interchange and between Macquarie University Research Park / Private Hospital) and the train station.
- *Talavera Road* – This key street links Macquarie Business Park in the east with the Macquarie Shopping Centre, Herring Road and Macquarie University. Redevelopment of the sites fronting Talavera Road for a mix of residential, commercial and retail uses will present opportunities to improve the pedestrian amenity, public domain and landscaping of this street.

Potential Western Sydney Light Rail network

Parramatta City Council has recently undertaken a feasibility study into a potential Western Sydney Light Rail Network. The study investigates the potential for light rail lines to connect Parramatta with both Castle Hill and Macquarie Park.

NSW Government has identified a number of strategic transit network corridors as part of the *NSW Long Term Master Plan* and is working with Parramatta City Council on the Western Sydney Light Rail Network to better connect Parramatta CBD with other centres.

Parramatta City Council is seeking funding from State and Federal Governments to complete a more detailed study and business case for the first stage of the Western Sydney Light Rail Network. At this stage the light rail network is a Council proposal and is not NSW Government policy.

Potential Macquarie Park Line

According to Parramatta City Council's feasibility study, the proposed Macquarie Park Line could potentially connect Westmead health precinct, Parramatta CBD, University of Western Sydney at Rydalmere, Eastwood town centre and Macquarie Park. The proposed Macquarie Park Line is 17km long and could be serviced by ten light rail vehicles with a service frequency of 10 minutes in the peak period and 15 minutes at other times. It has a forecast patronage of approximately 5,000 people per peak hour and an estimated cost of $919M run on the proposed light rail is illustrated in Figure 40.

Figure 40 **Rydalmere to Macquarie Park section of proposed Macquarie Park Line**

Should the proposed Macquarie Park Line be implemented, the benefits to the precinct include:

- an additional public transport mode servicing Macquarie Park that supplements the existing Epping to Chatswood Rail Line and the bus network and provides a direct public transport connection westwards to Parramatta

- a potential increase in the use of public transport to and from Macquarie Park and mode shift away from private vehicle use
- potential for the development of a multi-modal transport interchange that manages connections between three public transit modes – rail, bus and light rail
- reinforcing the transformation vision of Herring Road as a major active street, supporting a mix of uses and activities.

Residential car parking

The Herring Road precinct is well served by public transport along a major rail corridor, in which the 2011 Journey to Work statistics demonstrate a high proportion of existing residents already use 'active transport' modes to travel to work. The Herring Road precinct has the capacity to reduce residential car parking rates and encourage higher public transport use.

The allocation of parking controls for on and off-street parking and parking demand management needs to strike a balance between discouraging multi-car households and private vehicle use whilst still providing parking facilities for essential vehicle trips.

The Ryde 2011 DCP parking rates, which would apply to the Herring Road precinct, have been reviewed as part of the transport strategy (refer to Table 2). The Herring Road precinct proposal recommends that Council adopt lower car parking rates for new residential development in its DCP. This strategy considers factors such as market responsiveness, shifts towards transit oriented development, demographic change and associated travel behaviours. The current DCP car parking rates for other non-residential uses remain unchanged and still apply.

The proposed reduced residential car parking rates for the Herring Road precinct are based upon best practice for transit-oriented development. In Sydney, best practice is demonstrated by examples of planning and development of similar urban renewal precincts and residential communities, located close to good public transport services or forming part of well-connected major centres.

The residential car parking requirements for existing metropolitan centres and renewal areas compared to the proposed requirements for the Herring Road precinct are shown in Table 3.An average of 1 car space per unit be provided.

Table 3 Comparison of maximum parking requirements for other centres / renewal areas

Dwelling type	Bondi Junction	Chatswood	Parramatta	Wolli Creek	Rhodes	Herring Road precinct (proposed)
Studio	N/A	0.5 spaces	N/A	1 space	1 space	**0 spaces**
1 bedroom	0-0.6 spaces	1 space	1 space	1 space	1 space	**1 spaces**
2 bedrooms	0-0.8 spaces	1 space	1 space	1-2 spaces	1.5 spaces	**1 space**
3+ bedrooms	0-1.2 spaces	1.25 spaces	1.2-2 spaces	2 spaces	2 spaces	**1 space**
Visitors	0 spaces for first 12 dwellings, 1 space/7 dwellings thereafter	1 space/4 dwellings	1 space/4 dwellings	1 space/4 dwellings	1 space/5 dwellings or less, 0.5 spaces/6 dwellings or more	**1 space/10 dwellings**

Reduced private vehicle use and travel behaviour can also be influenced by travel demand initiatives such as local car share schemes, on-street parking management, e.g. parking meters, time limited parking, residential parking permits and Residential Travel Plans that inform residents of the locally available travel options and the economic, social and environmental benefits of active transport.

Car share schemes can provide residents with an opportunity to reserve vehicles on a short-term basis, paying only for the time the car is used and the mileage driven. Car sharing performs best when it is provided in areas that are already well served by public transport, where residents need to take longer trips occasionally. Other demand management strategies for the Herring Road precinct, recommended for consideration by Council are:

- Introduction of *Residential Travel Plans* that inform residents of the locally available travel options and the economic, social and environmental benefits of active transport
- on-street parking management
- potential to introduce metered parking in some streets and
- time limited parking and residential parking permits.

To better manage residential parking demand, the Department recommends that the City of Ryde amend DCP 2011 to:

- introduce the reduced residential parking requirements as shown in Table 3
- require *Residential Travel Plans* for new residential development
- encourage the provision of car share schemes for new residential development

3.4 Built form strategy

Increases in housing supply in existing urban areas generally require higher densities of development than currently built or achievable under existing planning controls. To maintain flexibility for future land uses and development forms to create a diverse and sustainable community, the Herring Road precinct proposes a mix of land uses along with increased building heights and development densities.

The built form strategy for the precinct aims to increase densities and building heights in areas with good access to good public transport, improve the connectivity and quality of the local street network and improve access to public spaces.

In implementing this strategy, the proposed planning and design controls:

- focus the highest development densities closest to the train station, where they can benefit the most from public transport – both rail and bus services
- increase development density in areas with good access to public transport, considered to be within 800m or approximately 10 mins walking time from the train station
- define the precinct's key activity streets and intersections with taller buildings
- respond to the scale of existing approved maximum building heights and the urban character of different parts of the precinct with a range of building heights between 45m and 120m (14-37 storeys)
- focus the highest buildings of between 90m and 120m in areas closest to the train station
- optimise the potential of precinct gateway sites as secondary opportunities with buildings of 65m and 90m in height
- ensure that new development faces onto and positively addresses public streets, public parks and open space connections and
- ensure proposed building heights work in conjunction with maximum floor space ratios.

Streetwalls

Well-designed streets require controls that ensure that the many buildings that form a street, comply with common rules to ensure that buildings address, enclose, define and help activate the street space.

Streetwalls are created by buildings that face the street. They help to create a walkable and active street environment that is characterised by similar setbacks, a range of building heights that define and enclose the street, landscape, pathways and ground floor activity on busier streets. The streetwall approach can achieve street edge buildings that define and activate streets, and integrate taller buildings, which are set back above the streetwall to minimise impact on streets and spaces below. Building height and floor space

ratio controls for the precinct are supplemented by built form controls that address building setbacks from the street, streetwall heights, upper level setbacks and building floorplate sizes. These are described in section 3.7.

3.5 Public space

High quality public spaces are an important factor in attracting investment and successfully creating environments attractive to existing and future residents. Public spaces include major and local streets, parks and open spaces both within the precinct and connections to parks and regional open space areas outside the precinct.

A range of public space opportunities exist in the Herring Road precinct for both improvements to existing public spaces and potential new public spaces created through the renewal of development sites. These opportunities can encourage and support new residential and mixed use activities and provide places for community activities and events.

The Herring Road precinct and Macquarie Park generally benefit from the network of parks and regional open spaces located within 800m of the precinct, including Lane Cove National Park to the north and these are illustrated in Figure 41.

Figure 41 **Parks and open space within 800m of the precinct**

Public space framework

The precinct's public space framework seeks to ensure that residential and mixed use growth opportunities are supported by high quality public spaces, connections and streetscapes.

Key public space objectives are:

1. **Herring Road** - transform Herring Road to be the precinct's central activity spine with a diversity of 'main street' activities and uses that better integrate the adjacent uses
2. **Local parks and spaces** - better distribute and connect public open space and park facilities throughout the precinct and improve connections to local and regional open space areas.
3. **Local streets** - improve street, pedestrian and cycle connections throughout the precinct better connecting residential areas, the train station, the university and the shopping centre.

The public space framework is illustrated in Figures 42 and 43.

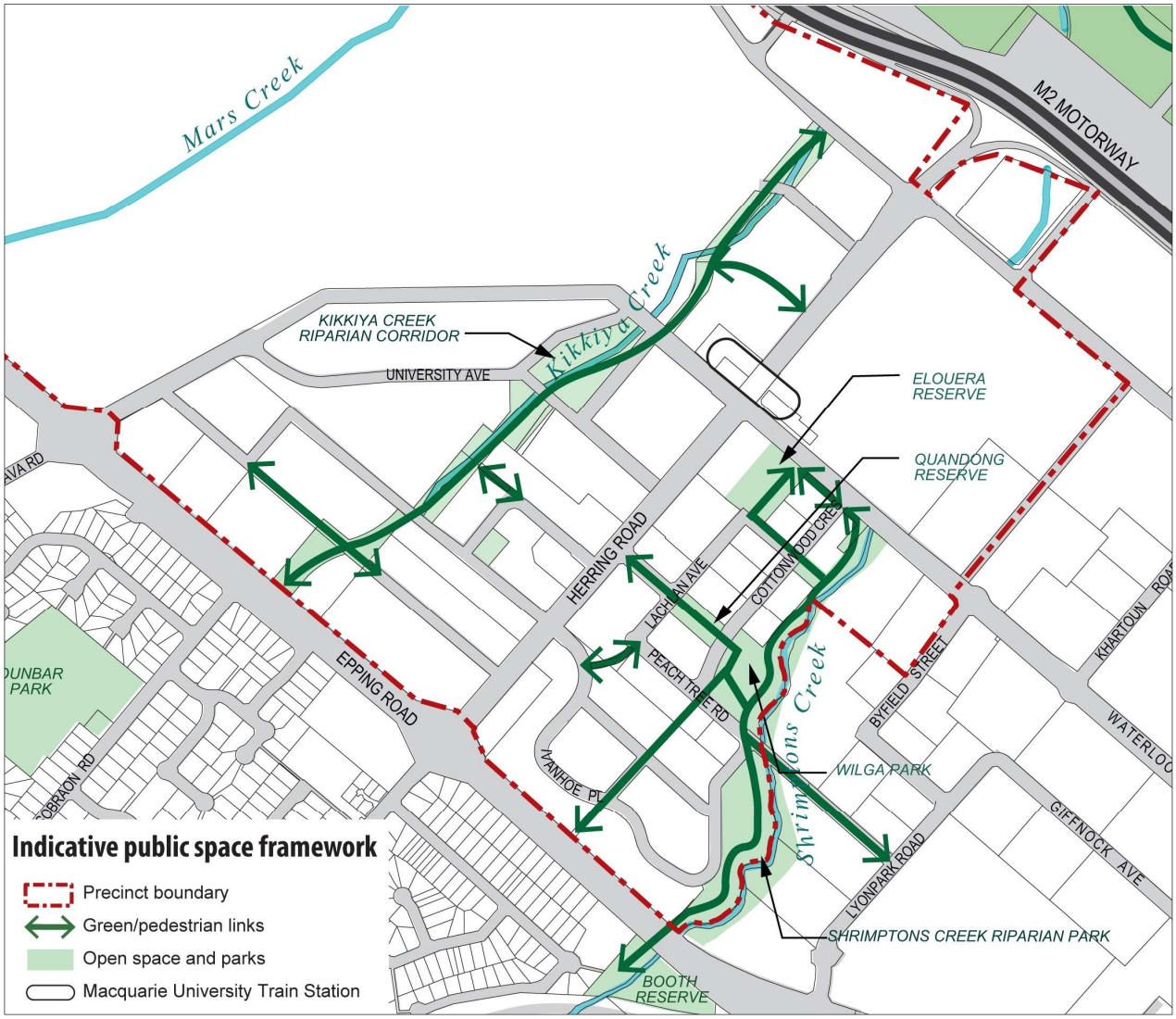

Figure 42 **Indicative public space framework for the precinct**

Figure 43 **Illustrative public space framework for the precinct**

Herring Road transformation

Herring Road is proposed to become the precinct's central activity spine. It will transform into a more attractive and comfortable 'main street' environment with wider pavements, increased activities, new street trees and landscaping, improved pedestrian connections and a cycleway.

Figure 44 illustrates the key improvements proposed for Herring Road, which seek to:

- encourage active ground floor uses that can create more street activity
- create wider footpaths for pedestrians and to accommodate cafés and shared activities
- create a separate dedicated two-way cycle way on the eastern side
- increase the number and accessibility of pedestrian crossings
- introduce new street tree planting including within the median strip
- integrate water sensitive urban design as an integral part of the landscaping
- improve street lighting, signage and way finding
- maintain the capacity to accommodate future forms of public transport

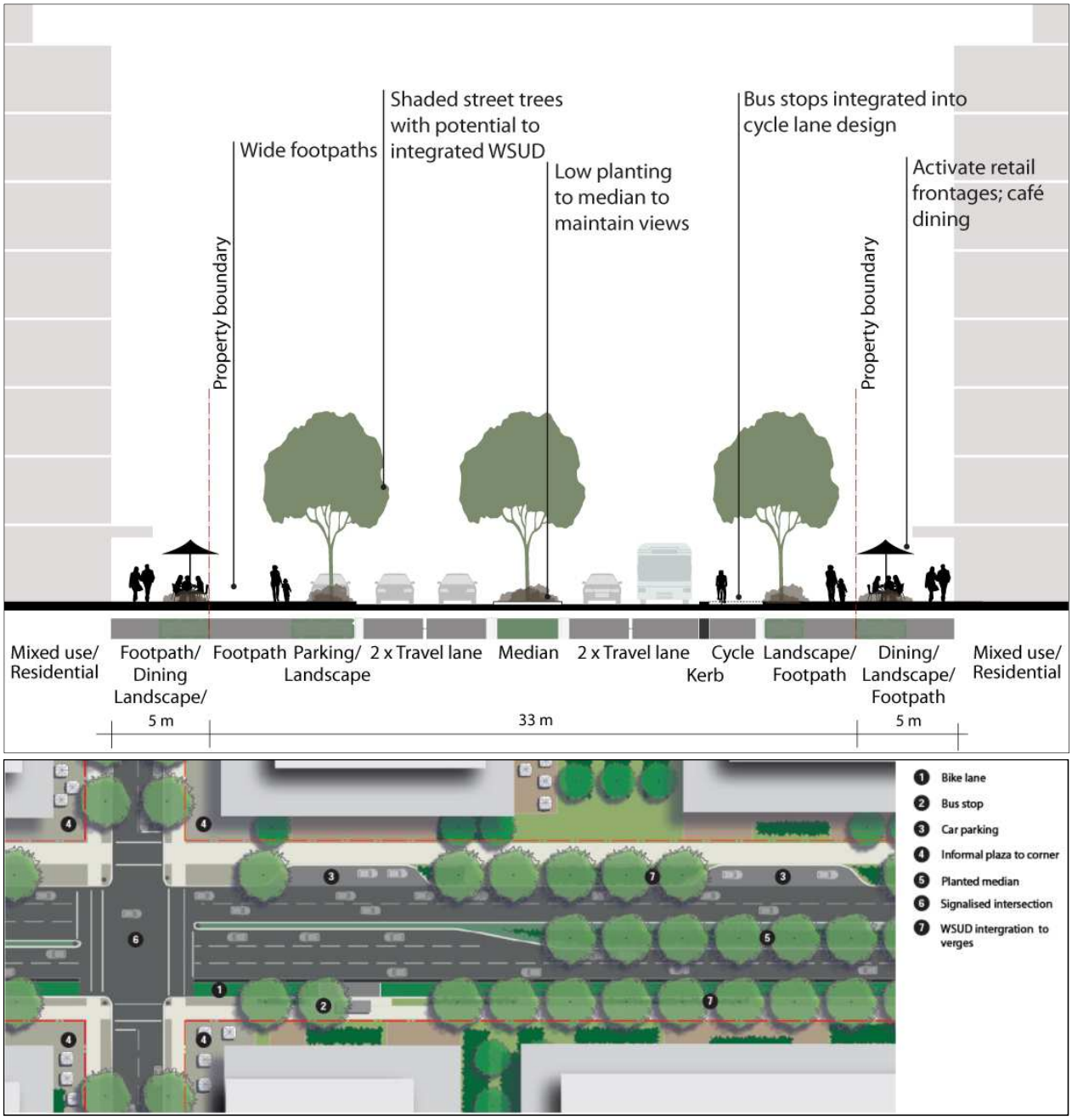

Figure 44 **Indicative improvement plan and street section for Herring Road**

Local parks and spaces

Local open spaces in the Herring Road precinct will be better integrated, whilst connections to regional open spaces will be improved. Proposals for local parks can:

- better connect existing local and regional parks to residential areas and business uses including the potential for a new bridge over Shrimptons Creek
- activate creek line corridors (Shrimptons Creek and Kikkiya Creek) with pathways, cycleways, frontages to local streets and better integration with other open space areas
- create a new sports field adjacent to Shrimptons Creek
- improve lighting and provide clearer sightlines that can improve safety
- improve park and open space facilities, including signage and wayfinding
- better connect to parks outside the precinct along the existing creek line corridors.

Figure 45 illustrates a plan and cross section of a typical local park.

Figure 45 **Illustrative plan and cross section of a typical local park**

Local streets

An improved local street network can better connect homes, work places, the train station, the university, shops and open spaces.

Figure 46 illustrates the proposed characteristics of a typical local street, which can include:

- increased road and pedestrian/cycle connections resulting in a finer grained network
- building entrances that address and overlook the street
- passive surveillance from buildings, active ground floor uses and increased pedestrian activity
- private landscape areas in building setbacks that contribute to street amenity
- integrated design of pedestrian paths, street tree planting, street parking and traffic lanes.

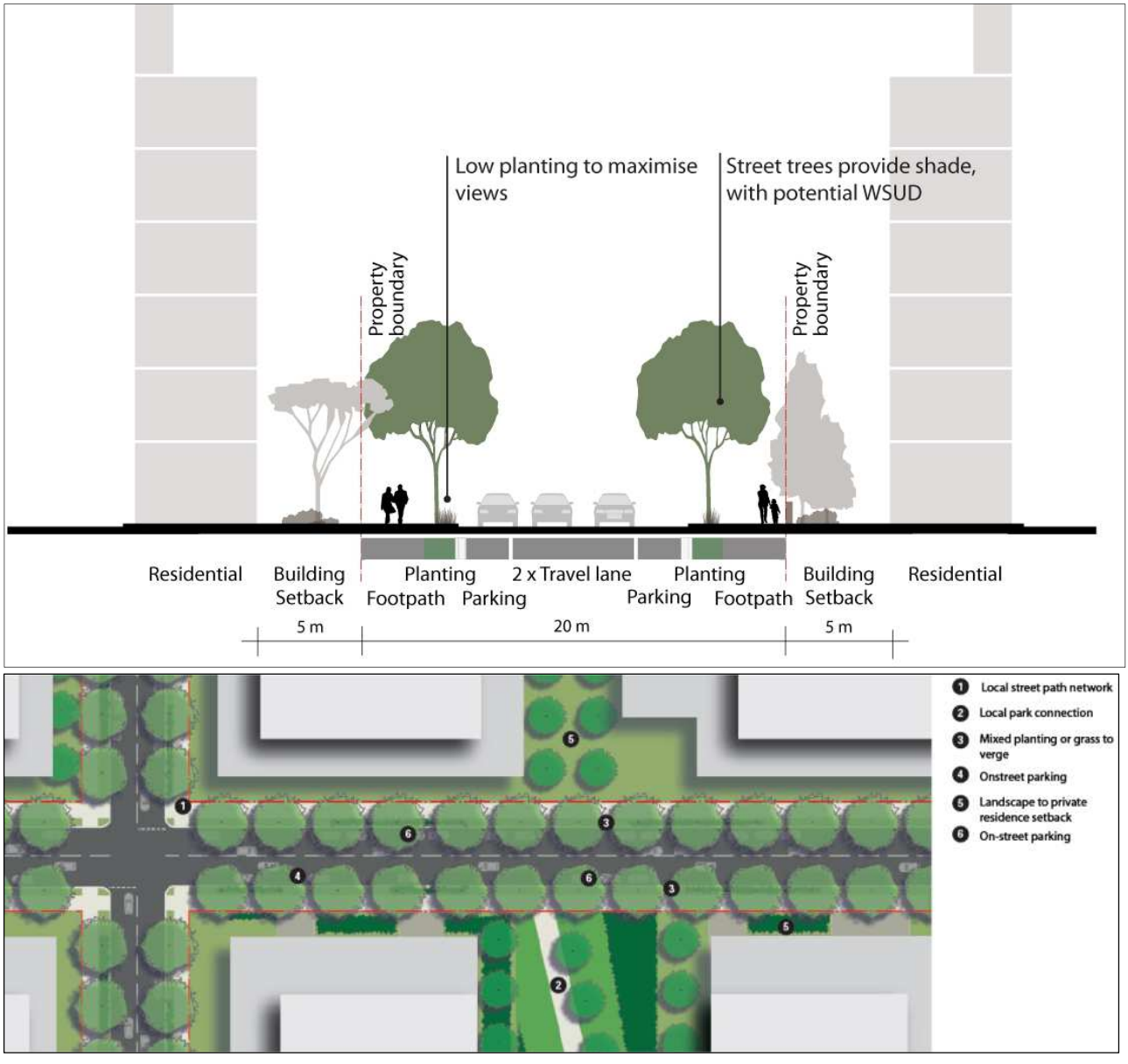

Figure 46 **Illustrative plan and cross section of a typical local street**

3.6 Proposed planning controls

To facilitate the Herring Road proposal, amendments are required to the City of Ryde's Local Environmental Plan (LEP) 2014. The Department also proposes to transfer the Macquarie University site out of the State Environmental Planning Policy (Major Development) SEPP 2005 and into Ryde's LEP.

Rezoning

The majority of the Herring Road precinct is already zoned B4 Mixed Use. The proposed B4 Mixed Use zone provides a flexible range of land uses allowing landowners to respond to changes in demand and market conditions over time.

An amendment to the City of Ryde's relevant Local Environmental Plan proposes changes to the following maps:

- zoning
- building height
- floor space ratio
- minimum site amalgamation and
- land reservation acquisition

A number of amendments to development controls in Ryde DCP 2011 are recommended, as outlined in the section 3.7.

Land uses that will be permissible with consent within the proposed B4 Mixed Use zone include commercial, retail, education, medical, residential, child care centres, community facilities, entertainment facilities, indoor recreation facilities, function centres, hotels or motels.

Macquarie University

The Major Development SEPP currently sets out the development controls for Macquarie University. The proposed rezoning of the Macquarie University Campus from SP1 Education Establishments to B4 Mixed Use will allow the university more flexibility in the way it accommodates a mix of academic, commercial and ancillary services within the campus. The remaining SP2 University Zone will remain unchanged. The B4 zone will enable Macquarie University to evolve into a more integrated development model for the campus and enable a closer synergy between education, research and commercial activities. This in turn can support the continued economic growth of the precinct and Macquarie Park as a key driver of Sydney's Global Economic Corridor.

Commercial core and business park uses

Two sites within the Herring Road precinct are currently in single ownership but have different land use zones applying across their sites under the Ryde Local Environment Plan 2014. These sites are proposed to be rezoned to B4 Mixed Use to ensure consistency.

80 Waterloo Road currently has a split zoning under the current LEP provisions, with one part of the property zoned B4 Mixed use and the other part zoned B3 Commercial Core. To enable a more flexible approach to land use that can lead to a more coordinated design and development outcome, it is proposed to rationalise the zone boundaries and consolidate the B3 and B4 zones into the B4 Mixed use zone.

101 Waterloo Road / 16 Byfield Street are located south of Waterloo Road. Under the current LEP provisions, the site is zoned B3 Commercial Core, but forms a contiguous site in single ownership with the site located to its north. To facilitate a more coordinated design and development outcome and rationalise zoning boundaries, it is proposed to rezone this site for B4 Mixed use, which also necessitates a minor adjustment to the Herring Road precinct boundary.

A small triangular strip of vacant land at the Talavera and Christie Road intersection is proposed to be rezoned from RE1 Public Recreation to B4 Mixed Use, which is consistent with the surrounding zoning.

Recreational zones

Existing public parks will maintain their current RE1 Public Recreation zone. Shrimptons Creek corridor maintains its current mix of RE1 Public Recreation and E2 Environmental Conservation zones. The new creekline park adjacent to Shrimptons Creek is proposed to be zoned RE1 Public Recreation.

Other proposed recreational areas have not been identified on the zoning map as their location will need consideration within the context of future development applications.

Figure 47 illustrates the proposed land zoning for the Herring Road precinct.

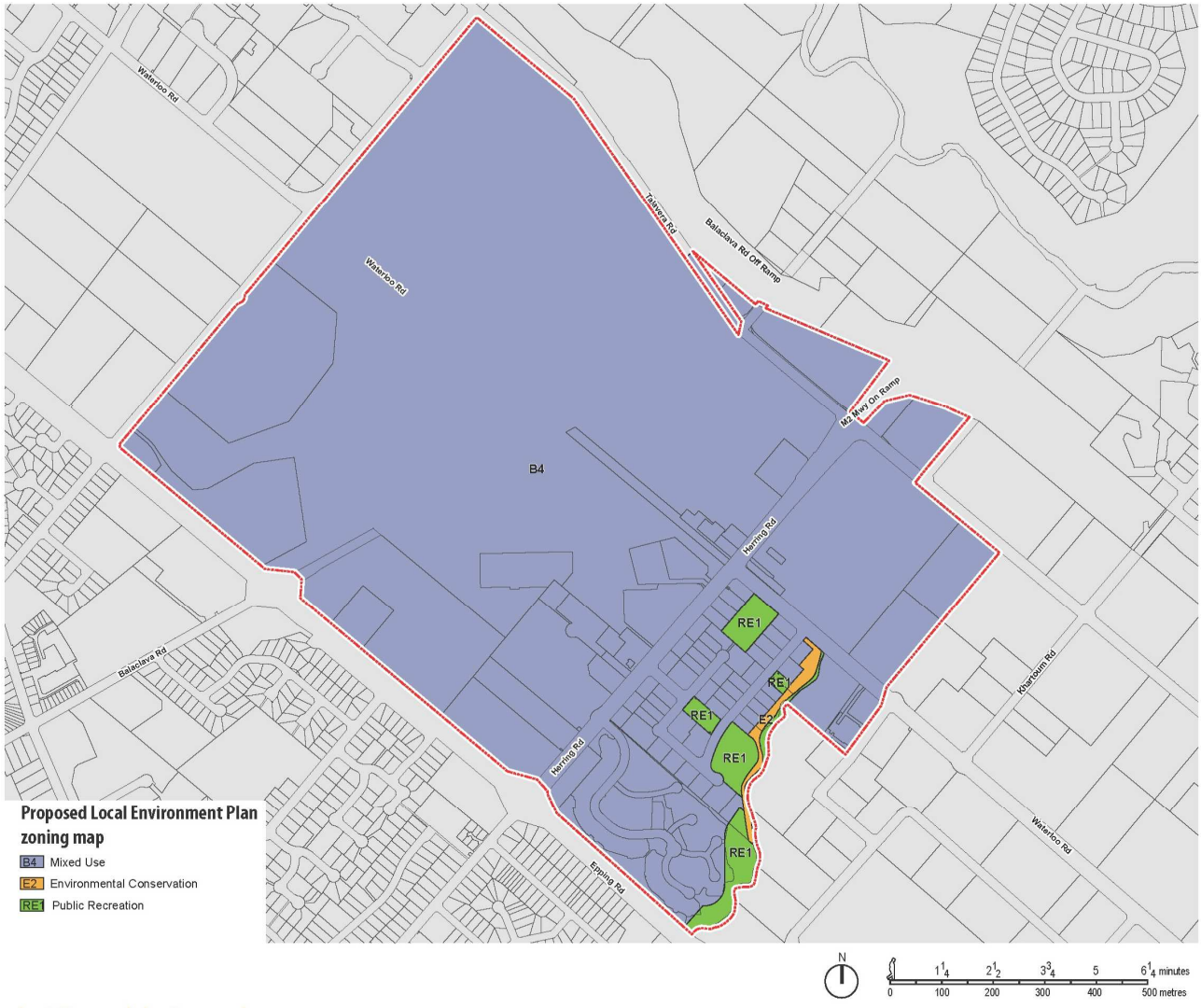

Figure 47 **Proposed land zoning plan**

Building height

The proposed building height controls for the Herring Road precinct (illustrated in Figure 48) seek to:

- define the precinct's key activity streets of Herring Road and Waterloo Road with taller buildings
- focus the highest buildings of between 90m and 120m in areas closest to the train station
- enable precinct gateway sites to act as secondary opportunities for building height with buildings of up to 65m and 90m in height
- add definition and legibility to the Herring Road precinct as part of Macquarie Park

The proposed building height controls should be interpreted together with the floor space ratio controls for the precinct.

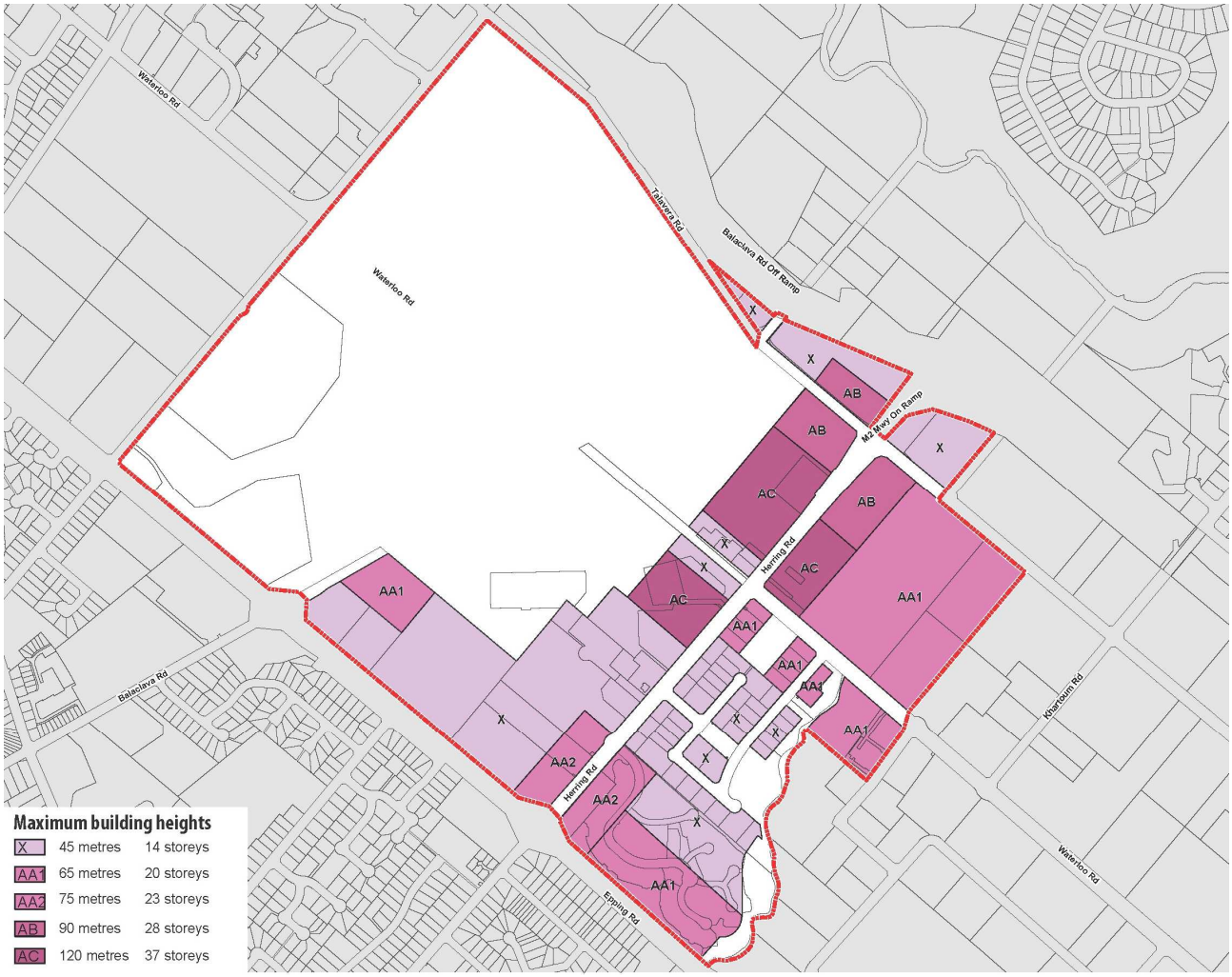

Figure 48 **Proposed building heights plan**

Floor space ratio

The proposed floor space ratio (FSR) controls for the Herring Road precinct (shown in Figure 49) complement the proposed building height controls.

The proposed FSRs represent a balance between optimising access to transport infrastructure, facilitating financially viable development and achieving quality built form.

- FSRs of 3.0 to 4.5:1 are proposed for site in close proximity to and with good access to Macquarie University Train Station and in locations that can facilitate taller, gateway buildings
- FSRs for strata titled properties range between 3.0:1 and 4.5:1, depending upon location and subdivision pattern (minimum lot size controls also apply)
- FSRs on sites adjacent to Epping Road and along Herring Road range between 2.5:1 and 2.9:1.

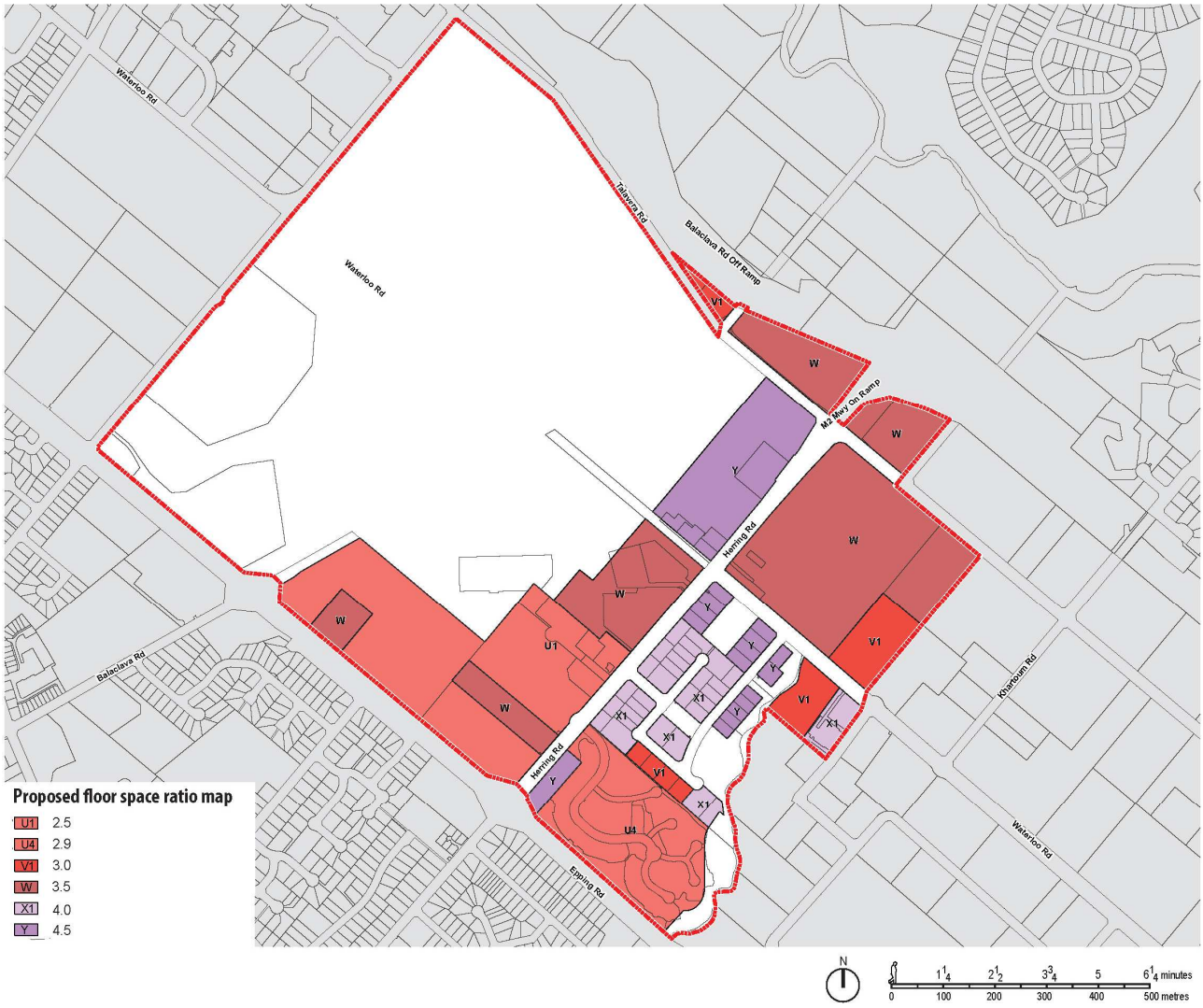

Figure 49 **Proposed floor space ratio plan**

Minimum lot size

Minimum lot sizes (illustrated in Figure 50) have been identified for some of the smaller lots to ensure new development has sufficient amenity to cater for the increase in density. These controls apply to the strata building precinct located east of Herring Road.

Site amalgamation to a minimum lot size of 1,800sqm is proposed. The site amalgamation control is to ensure that future renewal and redevelopment:

- can facilitate good design with appropriate building footprints and built form
- has allotment sizes and dimensions that are appropriate for scale and character of precinct renewal proposals
- responds to the existing and proposed future character of the area, its subdivision pattern and street structure and
- respects and minimises impact on the privacy and amenity of neighbouring properties.

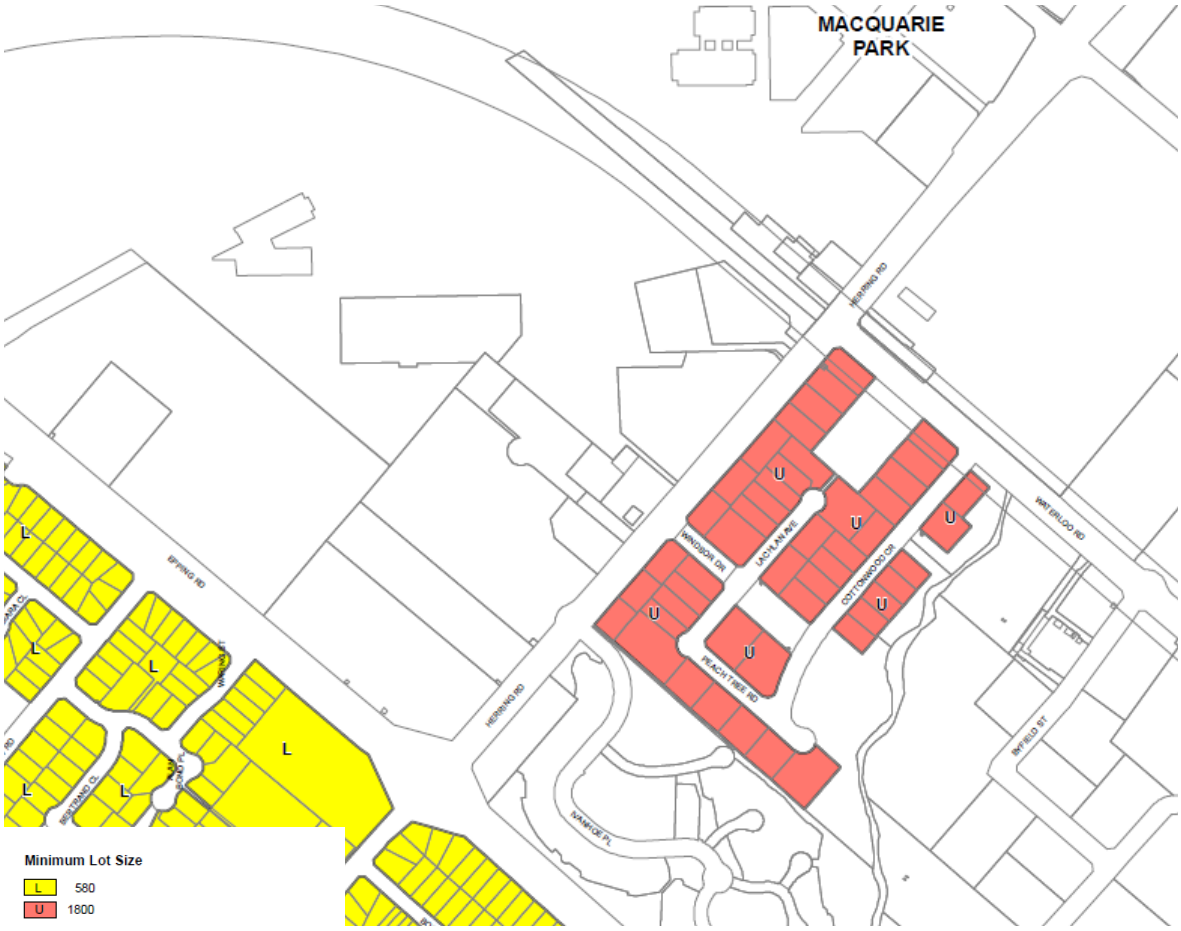

Figure 50 **Proposed minimum lot size plan**

3.7 Built form controls for DCP 2011

The proposed maximum building height and floor space ratio controls for the precinct are to be supplemented by built form controls that address:

- Building setbacks from the street
- Streetwall heights
- Upper level setbacks
- Building floorplate sizes

As part of the Herring Road precinct proposal, the Department recommends that the built form elements and controls in Ryde DCP 2011 be amended. The recommended built form amendments are described below and included as part of Appendix D.

Building setbacks

Building setbacks or the relationship between a building and the street helps to determine the character of a place. As setbacks are designed to create high quality interfaces between buildings and the streets and parks they face, they vary in response to local conditions:

- On Herring Road, south of Waterloo Road, to provide generous pedestrian area and to help activate the street edge at ground level, a 5m setback is proposed.
- On Herring Road and Waterloo Road adjacent to the shopping centre, to help activate the street edge, a 0m (zero) street setback is proposed to provide active ground floor uses such as convenience retail and cafes. On Talavera Road, a 5m setback is proposed.
- Building setbacks on the southern side of Waterloo Road and University Drive respond to a mix of conditions, which are Council's proposed 10m setback for Waterloo Road and the open space setting (Shrimptons Creek and Elouera Reserve), the desire for street edge activity (and a zero setback) opposite the train station and the need for a suitable setback on the southern side of the main entrance to the university, proposed at 12m.
- To accommodate existing mature trees and to maintain a landscape buffer, the proposed minimum building setback from Epping Road is 12m.
- On local residential streets within the precinct, buildings are generally to be setback 5m from the street alignment.

Figure 51 illustrates the proposed building setback controls for Herring Road precinct.

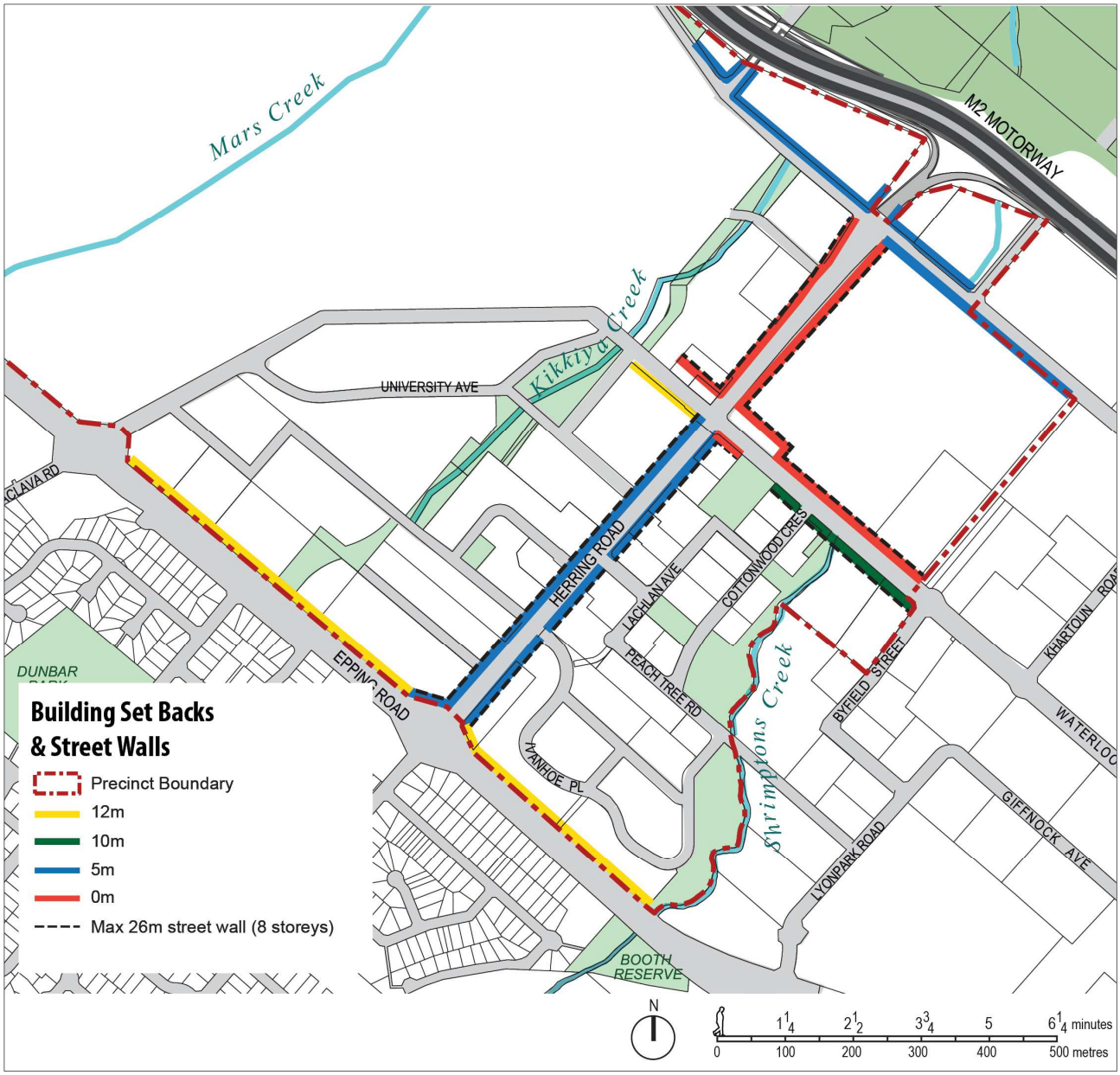

Figure 51 **Proposed building setback controls**

Streetwalls and upper level setbacks

Streetwalls are created by buildings that face the street. They help create a walkable and active street environment characterised by equal setbacks, a range of building heights that enclose the street, some sense of formality and ground floor activities on busier streets.

The streetwall approach balances the need for buildings that define and activate streets. It enables taller buildings to be further setback above the streetwall, thereby minimising their impact on the streets and spaces below.

- For Herring Road and Waterloo Road, the maximum streetwall height for new buildings is 26m, or about 8 storeys, with built form above this height to be setback 4m.
- For all other streets in the precinct the maximum streetwall height for new buildings is 20m, or about 6 storeys, with built form above this height to be setback 4m.

Building floorplates

In addition to building setback and street wall requirements:

- floorplates for residential buildings above the streetwall are limited to 800sqm
- floorplates for commercial buildings above the streetwall are limited to 1,400sqm

Building articulation zones are required to provide a level of legibility, interest and definition to the street wall and streetscape, as illustrated in Figure 52.

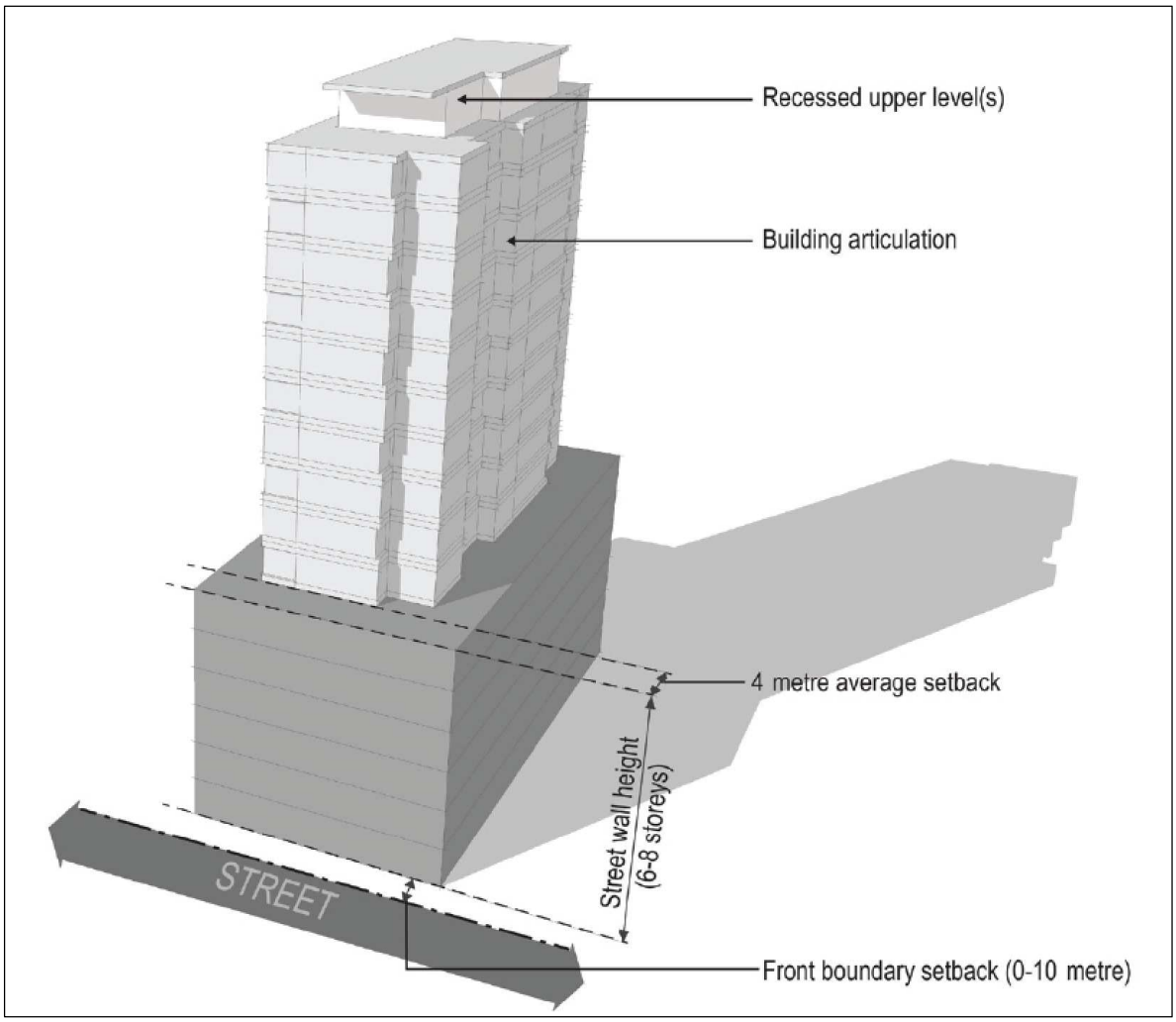

Figure 52 **Illustration of proposed residential building setback, floorplate and articulation controls**

4 Consultation

Planning and Environment is committed to ensuring that the community is consulted throughout the planning for all urban activation precincts. Three groups were formed to support the planning for the Herring Road Precinct:

- **Community Forum**, comprised of members of the community, business owners and other local organisations to provide feedback on the community's ideas and aspirations and evolving concepts for the precinct.
- **Steering Committee**, comprised of councillors and staff representatives from the City of Ryde.
- **Agency Working Group**, brought together input from agencies to discuss and resolve issues arising.

Details of the consultation strategy and consultation activities to date are contained in Appendix E.

4.1 Community Forum

The Department consulted with stakeholders and the community during the development of the precinct proposal. A community forum was held early in the planning process to gather input on visioning and aspirations for the precinct. Two follow-up workshops were held to provide progress updates and gather feedback. A workshop was held on 26 March 2013 with the following representatives:

- Macquarie Park Chamber of Commerce
- Residents from the Ivanhoe Estate
- Housing NSW/NSW Housing and Land Corporation
- Residents from the strata apartments
- Dunmore Lang College
- Ku Children's Services
- The Salvation Army
- Bike North (affiliated with Bicycle NSW)
- Residents for Ryde Group.

Summary of key issues arising from consultation

A range of issues were raised during consultation on the future planning for the Precinct and are summarised as follows:

Traffic

- An increase in traffic will contribute to the congestion of surrounding road networks. Specifically, this related to concerns regarding:
  - existing traffic congestion and accessibility affecting the area; and
  - the impact of potential new traffic on the amenity of existing residential areas.

Community facilities

- Current shortage of community facilities and access to them.
- Childcare centres in the Ivanhoe Estate precinct and at Macquarie University have long waiting lists.
- Community facilities are ageing and not easily accessible or attractive places for people to gather.

- There are limited safe and accessible activities for people to do at night.

Accessibility

- Difficult access to community facilities through main streets, roads and public transport.
- Elderly people and others have difficulty negotiating the busy bus interchange around the train station and Herring Road
- Streets are unpleasant and unsafe places to walk and ride.
- Access to the train station will become problematic once the North West Rail Link is opened and more commuters use Macquarie University Train Station.

Connectivity

- Limited connectivity between areas, particularly open space along creek corridors and between precincts.
- There is a shortage of open space across the precinct, despite the proximity of large areas of open space within the university precinct, in Lane Cove National Park and other nearby parks.
- Limited accessibility means some open space areas are not as well utilised as they could be.

Safety

- Significant safety improvements are needed within the precinct.
- Improved lighting and general visibility along creek corridors, train station and the residential areas.

Ivanhoe Estate

- The Ivanhoe community expressed their concerns over the uncertainty of the Ivanhoe Estate redevelopment.
- Residents expressed the importance of replacing existing public housing within the same area, should the renewal of the Ivanhoe Estate proceed.

4.2 Agency Working Group

The Agency Working Group comprised of representatives from the City of Ryde Council, Transport for NSW, Urban Growth NSW and the Department of Finance and Services (Land and Housing Corporation). The role of the Group was to resolve key issues, provide progress updates and present key elements of the work which included the proposed rezoning, concept design, public domain and infrastructure works etc.

4.3 Council briefing

The Steering Committee comprised of two Councillors, two members of Council staff and was chaired by a senior executive from Planning and Environment. The Steering Committees role was to ensure that elected representatives were briefed on investigations and had an opportunity to raise and explore issues with senior Department staff as investigations for the precinct progressed. While the Steering Committee met once, the Department continued to meet council staff and made presentations to full council. Five public meetings were held with the City of Ryde's Councillors and staff to present the precinct proposal and get feedback throughout its drafting stages.

4.4 Landowner briefings

A landowner briefing was held early in the project to brief government agencies and major landowners on the project and its purpose. A workshop was held on 26 March 2013 with representatives from the major landowners and government agencies, namely:

- City of Ryde Council
- UrbanGrowth NSW
- Department of Finance and Services
- Stamford Property Services
- Baptist Community Services
- Morling College
- Goodman Group
- AMP Capital
- Macquarie University
- Centuria
- Meriton

The Department and its consultants also met with the above mentioned major landowners on a one-on-one basis to identify any issues, opportunities and constraints which their sites could offer the redevelopment process. The Department presented draft design options which included matters of the proposed planning controls, access and movement and public spaces to these landowners.

4.5 Ivanhoe Estate

Representatives from the Department's planning team met with the Ivanhoe Estate Tenants Group on several occasions. The Department informed the group on the progress of the proposal, accompanied them on study tours of urban renewal areas and gathered feedback as planning progressed.

4.6 Consultation next steps

The Department will undertake further consultation during the exhibition period to maximise opportunities for the wider engagement of the community. Consultation will comprise of several community information sessions during the public exhibition period. These sessions will be held at a convenient and central location within the precinct. The local community and interested stakeholders will be able to attend information sessions to learn more about the project, ask questions and provide feedback to the project team. Information will also be made available online for review.

The Department will continue to consult with council, key stakeholders, community groups and government agencies during the exhibition period, through briefings and workshops where appropriate. Formal public submissions on the proposal will be invited during this time. When submissions are received, the Department will consider all issues raised and where relevant, modify the proposal to minimise impacts on the environment or to ensure consistency with state and regional planning objectives.

5 Key considerations

This section outlines how key issues have been investigated and addressed for the Herring Road precinct proposals.

5.1 Potential residential population growth

In 2011, the estimated residential population of the Herring Road precinct was approximately 2,913 persons living in 1,229 dwellings, whilst the larger Macquarie Park area had an estimated residential population of 6,149 (2011 Census, ABS).

Research and analysis indicates the Herring Road precinct has significant potential for increased development density and improved local housing supply. A market overview was undertaken as part of Herring Road economic feasibility assessment and notes that the rapid sales and take-up of recent Herring Road residential development commencements indicate a latent local demand for apartments.

It is estimated that an average annual market take-up rate of 250 to 300 dwellings per year might be achievable in the precinct.

Depending on future market demand, it is estimated that the precinct could deliver 2,000-2,400 new homes by 2021 rising to 4,500-5,400 new homes by 2031.

If fully realised, at an average occupancy rate of 2.1 persons per dwelling, the local residential population would increase proportionately to 4,200-5,040 persons by 2021 and 9,450-11,340 persons in 2031.

At this strategic planning stage, the average dwelling occupancy and future population numbers are only estimates. The actual number of dwellings delivered will be dependent upon many related factors over the next 10 to 20 years, including macro and micro economic conditions, changing employment patterns, social trends, market demand and emerging housing preferences.

5.2 Overshadowing studies

The Herring Road building height strategy concentrates the tallest buildings near the centre of the precinct, close to the train station and on the key activity streets of Herring Road and Waterloo Road. In designing areas for taller buildings, the proposal seeks to minimise the overshadowing and amenity impact on existing and proposed public open spaces within the precinct and on nearby residential areas.

Potential overshadowing impacts of the indicative built form for the Herring Road precinct have been assessed for mid-winter (21 June) and for the autumn/spring equinox (21 March / 21 September). Mid-winter, the shortest day of the year day has the longest shadows. For each of these days, an overshadowing study is provided for 09:00am, 12:00pm midday, 2:00pm and 3:00pm as illustrated in Figures 60 to 67.

Overshadowing assessment

The northerly orientation of Shrimptons Creek and the north-easterly orientation of Kikkiya Creek ensure that for both mid-winter and the autumn/spring equinox, these important linear open spaces will receive good solar access during the morning, the middle of the day and early afternoon. Only later in the afternoon will shadows from nearby potential buildings start to impact upon the creekline corridors.

In both mid-winter and the autumn/spring equinox, Wilga Park will retain significant sun access, with minimal overshadowing during the day, until around 3pm when the park will be partially shaded.

The north-south orientation of the proposed sports field located adjacent to Shrimptons Creek will ensure that it can receive good solar access during most of the day during both mid-winter and the autumn/spring equinox.

Located on the southern side of Waterloo Road, Elouera Reserve is close to the train station and the area for tallest buildings within the precinct. To ensure that the park retains good amenity, buildings heights that limit overshadowing are proposed. At both mid-winter and the autumn/spring equinox the park will receive good solar access during the morning and lunchtime, but would be affected by potential overshadowing in mid to late afternoon.

At both mid-winter and the autumn/spring equinox, the western side of Herring Road will receive good solar access in the morning. By midday and during the afternoon, the eastern side of Herring Road will receive good solar access with the western edge in shade.

For existing residential properties on the southern side of Epping Road, in mid-winter and the autumn/spring equinox, some overshadowing may occur in the morning, but not during the afternoon.

As future development proposals may vary from the indicative built form and overshadowing impacts shown, they will need to be further addressed in future development applications. Individual buildings will need to be designed in accordance with the solar access provisions of Council's DCP and the Residential Flat Design Code, which seeks to achieve acceptable levels of solar access to dwellings, private and communal open space.

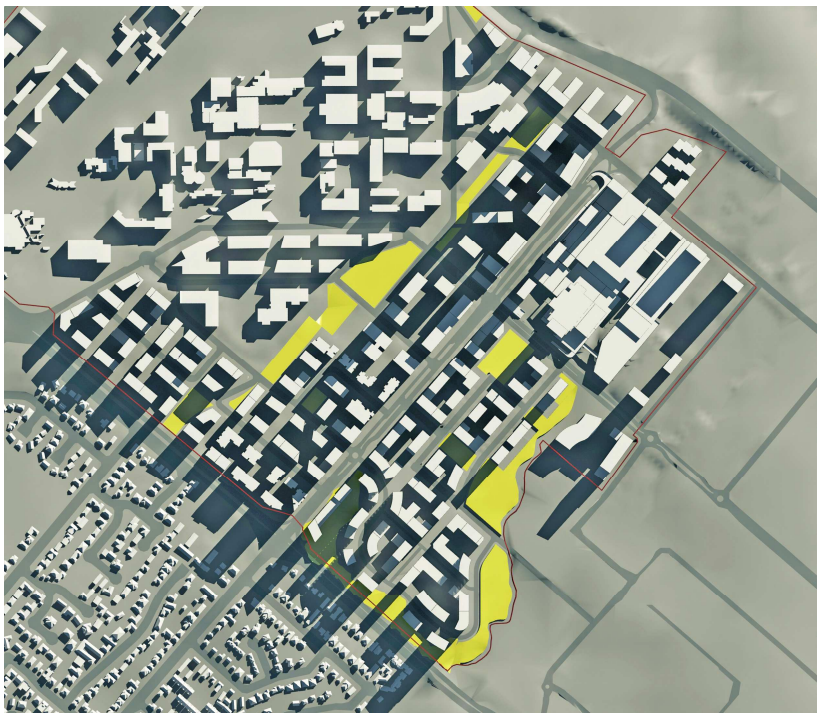

Figure 53 **Overshadowing – Mid winter – 9:00am**

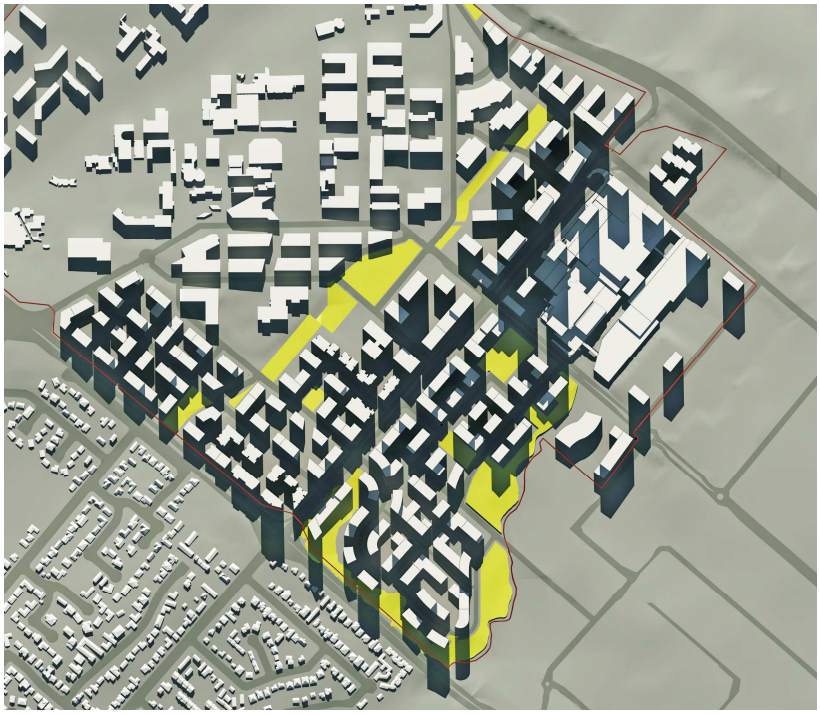

Figure 54 **Overshadowing – Mid winter – 12:00pm**

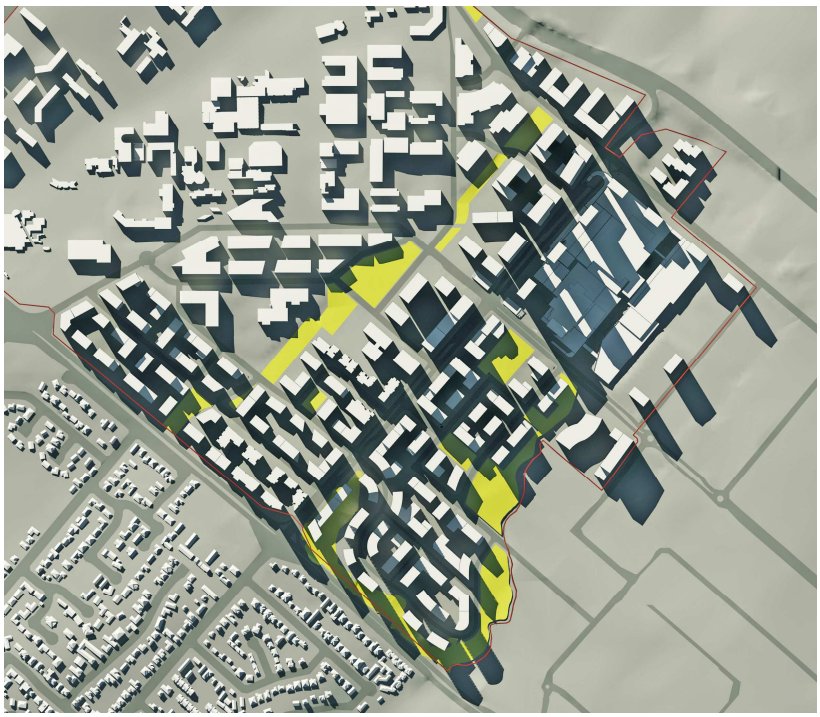

Figure 55 **Overshadowing – Mid winter – 2:00pm**

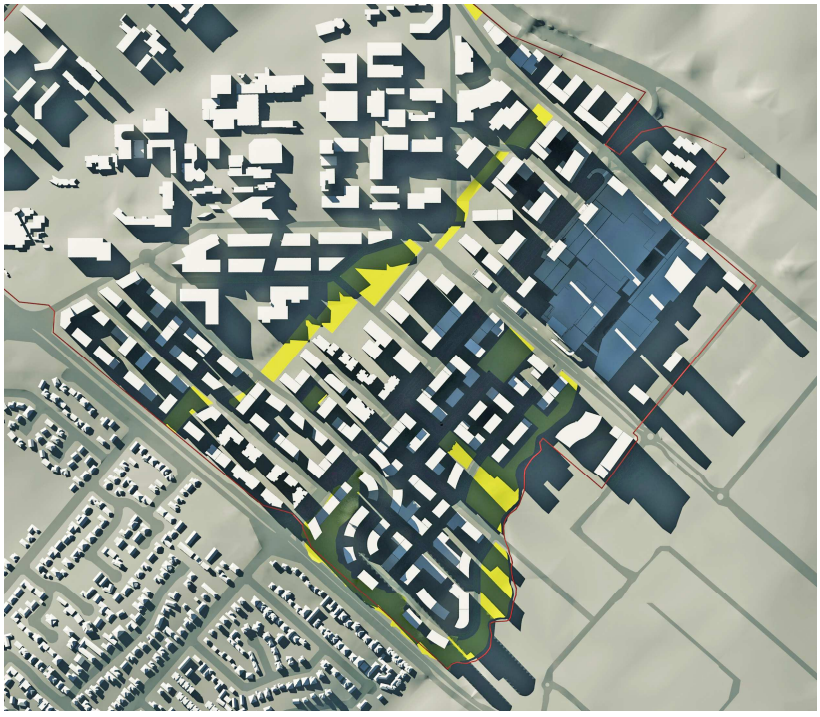

Figure 56 **Overshadowing – Mid winter – 3:00pm**

Figure 57 **Overshadowing – Equinox – 9:00am**

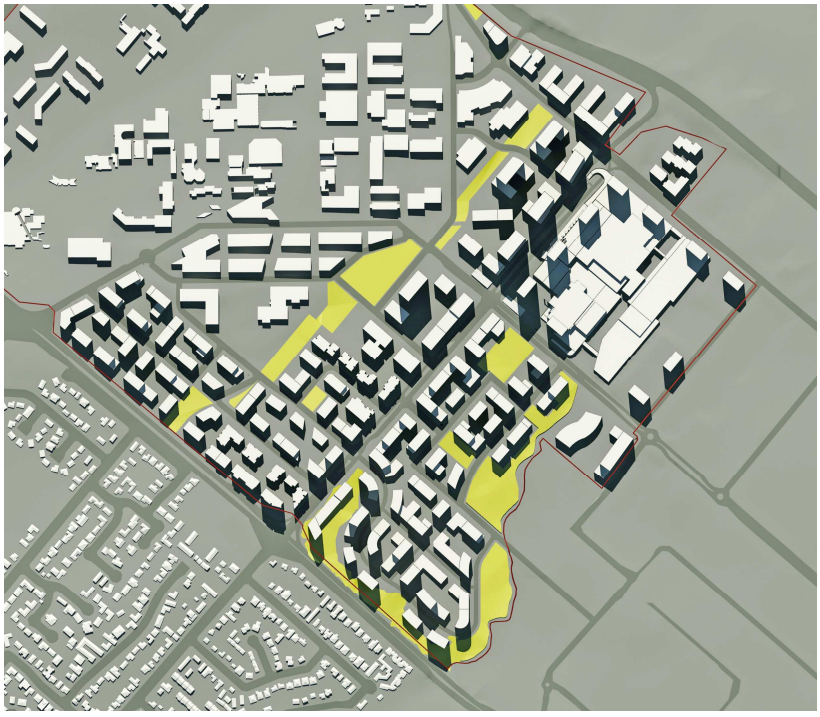

Figure 58 **Overshadowing – Equinox – 12:00pm**

Figure 59 **Overshadowing – Equinox – 2:00pm**

Figure 60 **Overshadowing – Equinox – 3:00pm**

5.3 Sub-regional infrastructure planning

The Macquarie Park corridor has been the beneficiary of significant sub-regional traffic and transport upgrades in recent years which include the Lane Cove Tunnel, the M2 Motorway and the Epping to Chatswood Rail Line. In addition, some of the major transport works that are planned include:

- completion of the North West Rail Link, envisaged for 2019-2020
- introduction of Waratah Rolling-stock in the period prior to 2019
- introduction of the Opal Card System over a 15 year period
- bus fleet replacement and upgrade
- upgrade of the Hills M2 motorway
- review and potential implementation of the F3 to M2 motorway connection proposal.

The Macquarie Park corridor is part of a broader, regional set of traffic and transport issues for the north and north western region of Sydney. Network traffic congestion and capacity bottlenecks in turn affect the performance of intersections in and around the Herring Road precinct. The Herring Road and Epping Road intersection in particular experiences capacity constraints and high traffic congestion levels, particularly during the morning peak period. This is a result of regional transport issues, local capacity constraints on intersections and reliance on cars for travel, which places pressure on the existing street network and street parking.

A strategic response

The scale of employment and housing growth projected for Macquarie Park, the North Ryde Urban Activation Precinct and the Herring Road Urban Activation Precinct requires a strategic response to ensure that changes to transport infrastructure can support projected growth.

Addressing these transport issues requires a whole-of-network planning strategy and a suite of measures that reduces reliance on car travel, enhances public transport and manages congestion and traffic flows efficiently.

5.4 Economic feasibility assessment

One of the key criteria underlying the Urban Activation Precinct Program addresses the need to ensure that the development in the precinct can be financially viable and consistent with market demand. To address this, an economic feasibility assessment was undertaken concurrently with the evolution of the Herring Road proposal.

The purpose of economic feasibility assessment was to assess the financial feasibility of the redevelopment within the precinct by testing higher density land uses for the strata title areas located within the precinct. This assessment was undertaken with the planning and urban design team and considered the need for site amalgamation that can deliver good built form, the need for and creation of new parks and proposed improvements to the existing network of street and walking / cycling paths.

The feasibility assessment for the areas of strata title apartments indicated that a range of increased floor space ratios is required to facilitate effective strata renewal and site redevelopment. The assessment reveals that depending upon site size, shape and location, floor space ratios between 3.0:1 and 4.5:1 are generally required to achieve economically feasible redevelopment.

Site amalgamation will be required to ensure future renewal and redevelopment can facilitate good urban design that:

- responds to existing subdivision pattern, street structure and area character
- respects and minimises impact on the privacy and amenity of neighbouring properties
- has lot sizes and dimensions that are appropriate for scale and future desired character of precinct proposals

The feasibility assessment, in conjunction with the urban design studies concluded that for the strata title apartment areas, there is a need to establish a minimum lot size of 1,800sqm for redevelopment to take place. The areas of the Herring Road precinct requiring site amalgamation are illustrated in the proposed minimum lot size map.

5.5 Supporting future growth of the precinct

Should the potential growth forecasts eventuate, they will increase the precinct's residential population and influence the future household mix. Significant increases in the residential population of the Herring Road precinct may result in the need for augmented and/or additional:

- traffic and transport facilities
- public open space and recreational areas
- community and cultural facilities

The majority of these improvements can be provided either by precinct developers or funded through the City of Ryde's Section 94 Contributions Plan. An infrastructure schedule of potential improvements is provided in Section 6.

As the Herring Road precinct redevelops, there will be a need to focus on the likely demographic profile and cultural and community needs of the emerging population.

Precinct Support Scheme

The NSW Government's Precinct Support Scheme (PSS) provides funding assistance for local government to assist in the provision of local infrastructure needed for urban activation precincts. Under the provisions of the Precinct Support Scheme, the Department has allocated up to $5 million to the Herring Road precinct to fund infrastructure upgrades.

During community consultation on precinct opportunities and priorities, the local members of the community were of the view that Herring Road itself should be improved and upgraded, specifically the section between Waterloo Road and Epping Road.

In the light of the community's views, Planning and Environment considers that Precinct Support Scheme funds could be allocated towards the improvement of Herring Road itself, as the infrastructure upgrade will be of benefit to existing and future residents, students and workers.

Herring Road – Proposed staged improvements

The proposed improvements to Herring Road are to be implemented in two main stages, as illustrated in Figures 61 and 62:

Stage 1: Western side of Herring Road comprises:

- widened footpaths with enough space for outdoor dining / trading and street tree planting
- an additional flexible-use 2.5m of pavement width that can be used for outdoor dining
- convenient on-street car parking or planting beds
- a narrowed street median, landscaped with new street trees

Stage 2: Eastern side of Herring Road comprises:

- a new two-way cycleway connecting Waterloo Road to Epping Road including separation kerbs
- new integrated with street tree planting and landscaping
- potential extension of the Herring Road cycleway from Epping Road to Kent Road, where it can connect with Council's existing regional cycleway network.

Figure 61 **Improvements are proposed between Epping Road and Waterloo Road**

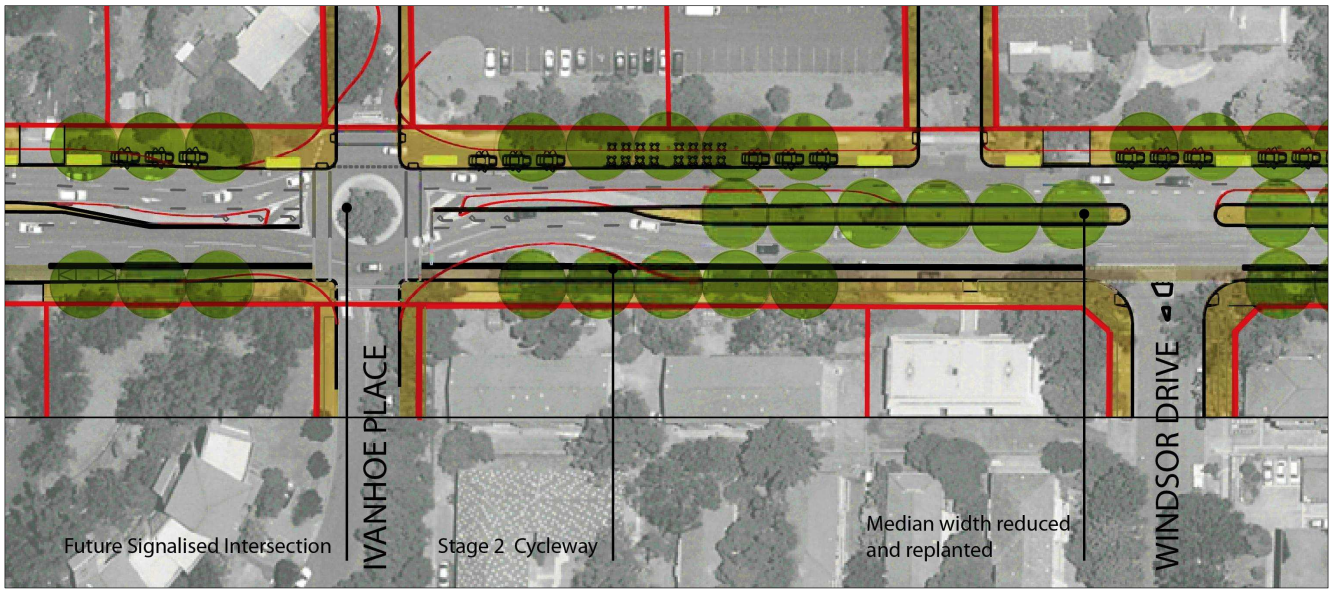

Figure 62 **Detail of improvements between Ivanhoe Place and Windsor Drive**

There is also potential to extend the Herring Road two-way cycleway between Epping Road and Kent Road, where it can connect with Council's existing regional cycleway network. As this section of the potential cycleway extension is located outside the Herring Road precinct, it could be funded through the City of Ryde's Section 94 Contributions Plan.

Alternatively, the Precinct Support Scheme funding could be allocated towards the provision of public open space that can serve existing and future residents, students and workers.

Section 94 Contributions

The City of Ryde's existing Section 94 Development Contributions Plan applies to the Herring Road precinct. This plan is required to be regularly updated to reflect changes in planning frameworks and changing community needs. Additional growth will be required to make contribution under the relevant plan in force at the time of the determination of a specific development application.

City of Ryde's Section 94 Contribution Plan will need to be updated to incorporate the infrastructure projects for the Herring Road precinct.

Section 94 Contributions collected by Council could fund local infrastructure such as:

- Environmental and open space improvements to Shrimptons Creek riparian corridor
- Improvements to the amenity and facilities of local parks and creek corridors - Wilga Park, Quandong Reserve, Elouera Reserve and Shrimptons Creek
- Provision of new local parks and facilities
- Provision of new streets, such as the extension of Peach Tree Road to Lyonpark Road, comprising a new one way street and bridge across Shrimptons Creek
- Herring Road cycleway extension, from Epping Road to Kent Road
- Provision of community facilities, such as a multi-purpose community space, community lounge, hall, gallery, local library or other community facilities.

Alternatively, developers can enter into a Voluntary Planning Agreement (VPA) with the City of Ryde to provide local infrastructure in lieu of the Section 94 Contributions.

Environmental considerations

Sydney Turpentine-Ironbark Forest (STIF) is found within Ryde Council and particularly along the Kikkiya Creek and Epping Road near the Ivanhoe Estate.

STIF is classified as an endangered ecological community in Part 3 of Schedule 1 of the *Threatened Species Conservation Act*. The listing of endangered ecological communities is provided for by Part 2 of the Act.

The Department is aware that STIF exists within the precinct. The Department will consult with the Director-General of the Department of Premier and Cabinet under section 34A of the Act with respect to critical habitat or threatened species, populations or ecological communities, or their habitats which may be adversely affected by the proposed instrument.

6 Infrastructure summary

A summary of the infrastructure items which support the proposed development of the precinct is provided in Table 4 and includes local and regional traffic improvements, public transport improvements and community infrastructure.

These infrastructure items would be required to be funded by a range of sources as highlighted in the table. The Precinct Support Scheme is also available to support infrastructure delivery and would prioritise items which improve public spaces and local access.

Table 4 Infrastructure summary for Herring Road Urban Activation Precinct

Item	Measure	Who	Timing/Threshold
	Regional traffic improvements		
1.	Upgrade of the Hills M2 motorway, including: o New Herring Road westbound off ramp from M2 o New Christie Road eastbound on ramp to M2 o Additional westbound lane from Lane Cove Road to Beecroft Road o Additional eastbound lane from Pennant Hills Road to Lane Cove Road Talavera Road is widened to two lanes in each direction, between Christie Road and Alma Road	Transurban	Ongoing
	Local traffic improvements		
2.	Epping Road / Balaclava Road intersection – additional through lane on Balaclava Road (south) and additional right turn lane on Balaclava Road (north)	Macquarie University	As sites develop
3.	Epping Road / Herring Road intersection – additional through lane on Herring Road (south), additional right turn lane on Epping Road (east), two through lanes and two right turn lanes on Herring Road (north) and adjusted signal pass	Macquarie University	As sites develop
4.	Herring Road / Ivanhoe Place – new signalised intersection and pedestrianised crossing to improve east west connectivity	Developers/ City of Ryde	As sites develop
5.	Herring Road / Dunmore College - potential new signalised intersection and pedestrianised crossing to improve local connectivity	Developers/ City of Ryde	As sites develop
6.	Proposed new street, cycleway and pedestrian connection between Cottonwood Crescent and Ivanhoe Place	Developers/ City of Ryde	As sites develop

7.	Proposed new street, cycleway and pedestrian connection between Herring Road and Balaclava Road	Developers/ City of Ryde	As sites develop
8.	Potential new street, cycleway and pedestrian connection between Peach Tree Road and Lyonpark Road and new bridge over Shrimptons Creek	Developers/ City of Ryde	As sites develop
	Public transport improvements		
9.	North West Rail Link (NWRL) will connect into the Epping Chatswood Rail Line which will be upgraded for NWRL single deck trains and improved service levels	TfNSW	NWRL completion date estimated for 2019-2020
10.	North West Region bus services to be refined to meet the demands of regional growth and in conjunction with implementation of the NWRL	TfNSW	Ongoing
11.	Local improvements to bus services	TfNSW	Ongoing
	Community infrastructure measures		
12.	Improvements and upgrade of Herring Road, including wider pavements, narrowed median, new landscaping, new street trees and a new two-way cycleway	Developers/ City of Ryde	Potential funding of improvements under the Urban Activation Precinct Support scheme
13.	Potential southerly extension of the Herring Road cycleway to Kent Road, connecting into the City of Ryde's regional cycleway network	Developers/ City of Ryde	-
14.	Multipurpose community facility, such as a community space, community lounge, hall, gallery, local library or other community facilities	Developers/ City of Ryde	Potential delivery as part of future redevelopment Macquarie Shopping Centre
15.	New and improved local parks provide amenity for residents	Developers / City of Ryde	Delivery as part of a Section 94 Plan
16.	New park adjacent to Shrimptons Creek corridor	Developers/ City of Ryde	Delivery as part of a potential renewal of the Ivanhoe Estate
17.	Shrimptons Creek corridor environmental improvements	Developers/ City of Ryde	-
18.	Shrimptons Creek public access and cycleway improvements	Developers/ City of Ryde	-
19.	Kikkiya / University Creek corridor environmental improvements	Developers/ City of Ryde	-
20.	Regional open space connections improved: o north to Lane Cove National Park and o south via Shrimptons Creek to Els Hall Park	Developers/ City of Ryde	-

7 Next steps

Following the public exhibition of the Herring Road precinct rezoning proposal, Planning and Environment will assess the matters raised in the submissions and where required, the rezoning proposal will be amended.

Once finalised, the rezoning proposal will be forwarded to the Minister for Planning and Environment for approval.

Approval or gazettal of the rezoning will enable the lodgement of development applications for individual development proposals with the City of Ryde for processing and assessment.

Planning and Environment will provide assistance to the City of Ryde on the necessary amendments to Ryde DCP 2011 and regarding the allocation of Precinct Support Scheme funding.