



# Carter Street Lidcombe Urban Activation Precinct

## Planning Report

Volume 1

February 2014



Planning &  
Infrastructure

To view an electronic version in PDF format, visit [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

© Crown Copyright 2014

Department of Planning & Infrastructure

Printed February 2014

**Disclaimer**

While every reasonable effort has been made to ensure that this document is correct at the time of printing, the State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance or upon the whole or any part of this document.

**Copyright Notice**

In keeping with the Department of Planning & Infrastructure's commitment to encourage the availability of information, you are welcome to reproduce the material that appears in this Planning Report for personal, in-house or non-commercial use without formal permission or charge. All other rights are reserved. If you wish to reproduce, alter, store or transmit material appearing in this Planning Report for any other purpose, a request for formal permission should be directed to:

Department of Planning & Infrastructure

GPO Box 39

Sydney NSW 2001

You are required to acknowledge that the material is provided by the Department or the owner of the copyright as indicated in this Planning Report and to include this copyright notice and disclaimer in any copy. You are also required to acknowledge the author (the Department of Planning and Infrastructure) of the material as indicated in this Planning Report

# Contents

Contents .....	iii
Executive summary .....	vii
1    Introduction .....	1
1.1    Urban activation precincts overview .....	1
1.2    Why Carter Street? .....	3
1.3    Report structure.....	4
2    Precinct overview .....	5
2.1    Site context .....	5
2.2    Surrounding land uses .....	9
3    Precinct proposal.....	13
3.1    Vision and principles .....	13
3.2    Urban structure and land use .....	14
3.3    Built form .....	16
3.4    Access and movement .....	17
3.5    Public spaces .....	25
3.6    Community uses .....	30
3.7    Proposed planning controls .....	31
4    Consultation .....	38
5    Key considerations.....	40
5.1    Noise .....	40
5.2    Odour .....	41
5.3    Contamination .....	41
5.4    Economic impacts .....	42
5.5    Overshadowing .....	42
5.6    Views and visual impact.....	46
5.7    Sustainability.....	47
6    Infrastructure summary.....	48
7    Next Steps.....	51

## List of figures

Figure 1	Vision for Carter Street Urban Activation Precinct .....	vii
Figure 2	Location of current urban activation precincts in Sydney.....	1
Figure 3	Aerial photo of the precinct .....	5
Figure 4	Carter Street precinct looking south east along Edwin Flack Avenue.....	6
Figure 5	Landscape and open space character .....	7
Figure 6	Existing buildings within the precinct.....	8
Figure 7	Location plan .....	9
Figure 8	Aerial view of Sydney Olympic Park with the Carter Street precinct to the right.....	10
Figure 9	Sydney Olympic Park Master Plan 2030 – land uses and controls.....	11
Figure 10	Wentworth Point, north of Sydney Olympic Park .....	12
Figure 11	Proposed John Ian Wing Parade extension and Hill Road park.....	13
Figure 12	Indicative Structure Plan .....	14
Figure 13	Illustrative Plan .....	16
Figure 14	Proposed built form along Hill Road near Carter Street .....	17
Figure 15	Key local and regional intersections.....	19
Figure 16	Proposed street network.....	20
Figure 17	Existing and proposed public transport networks .....	21
Figure 18	Pedestrian and cycle network .....	22
Figure 19	Key public spaces.....	26
Figure 20	Bio-swale corridor – view south to village centre .....	27
Figure 21	Proposed Haslams Creek edge treatment – section .....	28
Figure 22	Proposed Haslams Creek edge treatment.....	28
Figure 23	Local centre and village square at Uhrig Road .....	29
Figure 24	Sydney Olympic Park Tree Master Plan.....	30
Figure 25	Preferred location for community facilities at new village park .....	31
Figure 26	Proposed zoning plan .....	33
Figure 27	Proposed floor space ratio plan .....	34
Figure 28	Proposed building heights plan .....	35
Figure 29	Proposed setbacks.....	36
Figure 30	Shadows at 9:00am on the winter solstice (21 June).....	43
Figure 31	Shadows at 12 noon on the winter solstice (21 June).....	43
Figure 32	Shadows at 3:00 pm on the winter solstice (21 June).....	44
Figure 33	Shadows at 9:00am on the autumn equinox (21 March).....	44
Figure 34	Shadows at 12 noon on the autumn equinox (21 March).....	45
Figure 35	Shadows at 3:00 pm on the autumn equinox (21 March).....	45
Figure 36	Views and vistas .....	46

## List of tables

Table 1	Key elements .....	15
Table 2	Staged transport improvements .....	24
Table 3	Key permissible uses within proposed zones .....	32
Table 4	Car parking rates.....	37
Table 5	Noise criteria .....	40
Table 6	Infrastructure summary .....	48

## Appendices (see separate volume)

Appendix A	Statement of intended effect <i>Department of Planning &amp; Infrastructure</i>
Appendix B	Draft Development Control Plan <i>Department of Planning &amp; Infrastructure</i>
Appendix C	Consideration of planning policies and strategies <i>Department of Planning &amp; Infrastructure</i>
Appendix D	Transport impact assessment <i>Parsons Brinckerhoff</i>
Appendix E	Economic feasibility study <i>Jones Lang LaSalle</i>
Appendix F	Community facilities study <i>Elton Consulting</i>
Appendix G	Preliminary site investigation <i>WSP Environmental</i>
Appendix H	Noise impact assessment <i>Wilkinson Murray</i>
Appendix I	Odour assessment <i>Pacific Environment Limited</i>

## Glossary

Act	Environmental Planning and Assessment Act
AHD	Australian Height Datum
CBD	Central Business District
DCP	development control plan
department	Department of Planning and Infrastructure
FSR	floor space ratio
GFA	gross floor area
ha	hectare
LEP	local environmental plan
LGA	local government area
Minister	Minister for Planning and Infrastructure
RMS	Roads and Maritime Services
SEPP	State Environmental Planning Policy
SOPA	Sydney Olympic Park Authority
TfNSW	Transport for New South Wales
TMAP	Traffic Management and Accessibility Plan
UAP	Urban Activation Precinct

This page is intentionally blank.

# Executive summary

This planning report supports the proposed rezoning of the Carter Street Urban Activation Precinct. It has been prepared by the Department of Planning and Infrastructure to provide an overview of the proposed zoning amendment and its impact on the environment.

## Urban Activation Precincts

Under the *Draft Metropolitan Strategy for Sydney to 2031*, the NSW Government's aim for Sydney for the next 20 years is for 'a strong global city ... a liveable local city'. The biggest challenge to achieving this aim is how to house and provide jobs for the extra 1.5 million residents predicted by 2031, who will need another 545,000 homes. In addition, changing preferences and lifestyles of Sydney's residents need to be considered, with key drivers being a desire to live near centres and close to workplaces, shops and services, and a preference for apartments and ageing in place. Consequently, many new homes will need to be built in existing urban areas. The department is planning for growth in some of these areas through its Urban Activation Precinct program.

All urban activation precincts follow a similar process to determine the most appropriate development. The foundation is evidence based planning, in which studies are undertaken to understand the existing constraints and opportunities and developed into a proposal for the rezoning of areas within the precinct. Community consultation may include community forums, reference groups and information sessions. There is also a Precinct Support Scheme to be shared between the precincts to improve public spaces and local access.



**Figure 1 Vision for Carter Street Urban Activation Precinct**

## Why Carter Street?

In March 2013, the NSW Government endorsed the Carter Street precinct as an Urban Activation Precinct. This decision was based on a number of factors, including that the precinct:

- supports the broader Sydney Olympic Park Specialised Precinct which is designated to accommodate significant jobs and housing growth
- connects to Sydney Olympic Park and parklands, which offer a high level of amenity in a natural environment
- is adjacent to major sports, recreational and entertainment facilities
- optimises the significant government infrastructure investment in the transport network including, Olympic Park Train Station, existing bus services, M4 Motorway and Parramatta Road
- responds to strong local market demand for additional employment and housing.

The precinct is also consistent with the *NSW Urban Activation Precincts Guideline*.

## Site Context

The 52 ha Carter Street Urban Activation Precinct is located directly south west of Sydney Olympic Park, north of the M4 Motorway and east of Haslams Creek. Carter Street is the main east-west road through the precinct, while Uhrig Road links with Sydney Olympic Park, in particular the emerging town centre and the train station to the north east. Entry to the precinct is from the M4 Motorway and Parramatta Road at Hill Road and from Parramatta Road at Birnie Avenue. To the south of Carter Street are high pressure gas and oil pipelines and electricity infrastructure within a 40 metre wide services easement. The precinct will benefit from a new eastbound on-ramp at Hill Road as part of the recently announced WestConnex project.

## Precinct proposal

### Vision and urban structure

The renewal of the Carter Street precinct will support Sydney Olympic Park in its role as a Specialised Centre / Town Centre and provide a mix of housing, employment and retail services.

The proposal will deliver:

- a range of housing options from townhouses to apartments in buildings of 4-20 storeys
- employment uses up to 6 storeys along the M4 Motorway corridor
- new parks, a primary school and community facilities.

### Access and movement

An assessment of the potential impacts of transport generated by the proposed development at Carter Street precinct was undertaken in conjunction with adjacent developments including Sydney Olympic Park, Newington and Wentworth Point residential areas.

A package of the transport measures is proposed to minimise the impacts of the development. These include strategies to reduce traffic generation and manage the traffic impact of the precinct. The measures are divided into a series of short, medium and long term upgrades to intersections to improve traffic flow, bus service frequency and new access options to train stations. In the medium to long term bus/light rail options to connect Parramatta to Sydney Olympic Park are to be investigated. These have the potential to positively impact on significant improvements to the subregional accessibility of the area.

Achieving an overall reduction in use of private cars through travel demand management and the increased use of public transport, walking and cycling is fundamental to creating a sustainable community. The precinct has the potential to achieve a future mode share that minimises its impact on the congested road network and takes advantage of the public transport opportunities available.

Redevelopment of the precinct is expected to have a positive impact on connectivity for pedestrians and cyclists. Within the precinct, footpaths, shared paths and crossing opportunities are proposed to create improved links to Olympic Park Train Station. The aim of the transport strategy is to reduce car use and

improve amenity through the creation of a walkable and cycle-friendly environment fully integrated with bus services, and upgraded road networks and intersections.

### **Proposed planning controls**

The proposed land use strategy focuses on providing a balance between optimising use of the precinct for provision of new housing while providing employment land for new businesses along the motorway.

- **Land use zones** – The precinct would predominantly be zoned R4 High Density and B2 Local Centre to the north of Carter Street and B6 Enterprise Corridor to the south of Carter Street, with public open space, parks and reserves to be zoned RE1 Public Recreation.
- **Building heights** – a range of heights of up to 8 storeys, with some eight landmark buildings up to 20 storeys to be located in key locations to reinforce gateways, key streets and open spaces.
- **Floor space ratio** – An FSR of 1.5:1 would apply to residential development adjacent to Haslams Creek and employment lands to the south of Carter Street, with a FSR of 2:1 applying to all other areas.

### **Consultation**

Consultation with key stakeholders, including relevant government agencies and landowners has been undertaken during the preparation of this proposal. Community information sessions are held during the exhibition period.

### **Key considerations**

Planning for the precinct has been informed by detailed consideration of a number of key issues summarised below.

The precinct is located in a high **noise** environment, potentially affected by noise from major events at Sydney Olympic Park, traffic noise from major roads including the M4 Motorway and noise from existing operations. A noise assessment concluded that noise sources can be suitably mitigated by means of feasible acoustic glazing designs. Interfaces to the M4 Motorway corridor and Sydney Olympic Park at Edwin Flack Avenue will be addressed through appropriately designed ‘edge buildings’.

An **odour** assessment examined the existing and proposed odorous impacts associated with the liquid waste treatment plant located north of the Carter Street precinct. Local land use, terrain and meteorology were used in dispersion modelling. Four scenarios were modelled to capture the different operational scenarios at the facility. The odour levels at private receptors are predicted to comply with the NSW Environment Protection Authority assessment criterion of 2 odour units (2ou) when the odour control furnace is operating under normal conditions. It concluded that with appropriate planning the Carter Street precinct can progressively develop from the south west mitigating the potential for adverse odour impacts, predicted to occur in the north western area. In the longer term relocation of the waste plant will be examined. This will require a whole of government approach as this is a major facility serving the Sydney Metropolitan area as well as NSW.

A desktop review of the site’s history and site inspections indicate that there are a number of **potential contaminants** from prior uses and land reclamation and contaminants associated with imported fill, railway land, waste dumping, petroleum based products and the meat industry. Preliminary investigations have been carried out for both sides of Carter Street. The study for the north side of Carter Street ascertained that with appropriate remediation strategies the area is suitable for multi-level residential development with basement car parking. On the south side further detailed site investigations are required to clarify the presence of any contaminants of potential concern associated with current and historic activities for certain properties within the precinct. The extent of any detailed site investigations proposed will vary dependent on the proposed land use.

The precinct is an established light industrial area with the majority of buildings providing large warehouse facilities offering logistics services. According to **economic feasibility** advice, maintaining or intensifying these uses is not recommended as it would not capitalise upon the unique location of the Carter Street precinct adjoining the significant cultural, sporting and social infrastructure of Sydney Olympic Park. There

are however, opportunities for development of commercial office and quality business park uses, delivering greater employment densities and better capitalising on the skilled labour market in inner western Sydney. The staged development of retail will complement other uses as part of the wider mixed use scheme and support the phased growth of population and employment. The retail will complement the aspirations identified in Sydney Olympic Park Master Plan 2030 to progressively develop a hub adjoining Olympic Park Train Station with commercial offices and retail uses.

The analysis of the proposed built form indicates that the public park adjacent to Hill Road will not be in **shadow** from late morning in mid-winter nor at the equinoxes, while the Haslams Creek waterfront will not be in shadow at all. The main residential streets and pocket parks will have good solar access during the middle of the day. Surrounding developments adjacent to the precinct south of Parramatta Road will also be completely free of overshadowing.

The protection of existing key **views** to the iconic buildings in Sydney Olympic Park and the creation of new views from the proposed new pathway along Haslams Creek have influenced the proposed urban form of the precinct. Sydney Olympic Park Authority minimises light pollution by limiting the use of lights at inappropriate times, locations, and intensities. Systems are designed to reduce light spill and to minimise night glow that would otherwise affect Carter Street precinct's future residents.

### **Next steps**

Following exhibition of this rezoning proposal, including the indicative structure plan and accompanying development control plan, the matters raised in submissions will be assessed and where required, the rezoning proposal will be amended.

# 1 Introduction

This planning report supports the proposed rezoning of the Carter Street Urban Activation Precinct. It has been prepared by the Department of Planning and Infrastructure (the department) to provide an overview of the proposed zoning amendment and its impact on the environment. A summary version of this document is also available in the accompanying precinct proposal document.

## 1.1 Urban activation precincts overview

In March 2013, the Minister for Planning and Infrastructure announced a number of sites in Sydney, including Carter Street as urban activation precincts (see **Figure 2**). The intent of the Urban Activation Precinct program is to increase housing choice and affordability by delivering increased housing supply in an environmentally, socially and economically sustainable manner. This is to be achieved by undertaking strategic planning for precincts that have good access to infrastructure, particularly transport, and have redevelopment significance of a scale that is important to implementing the State's planning objectives.



**Figure 2** 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 predicted 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 more easily access jobs, public transport, services, friends and family. The Department of Planning and Infrastructure 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 as needing to house and provide jobs for an extra 1.5 million people by 2031, there is also a need to consider 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 take into consideration these changes.

#### **Desire to live near centres**

People want to live near centres to make their lives simpler and more enjoyable. A centre is a focus area for shops, services and transport. It may be a large centre such as Sydney or Parramatta CBD, or a smaller centre such as local suburban shops.

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 people 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. Urban activation precincts plan for apartments close to public transport, shops and services. An increased supply of apartments should also assist with 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 varieties 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).

### **How close is close?**

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 located within the precinct. The Department of Planning and Infrastructure 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 be rezoned.

### **Community consultation**

Community consultation is important in developing plans for all urban activation precincts. Most precincts include a community forum or community reference group which meets regularly to:

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

Draft plans, such as this one, 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 initial eight urban activation precincts to improve public spaces, streetscapes, local access and walkability.

## **1.2 Why Carter Street?**

---

The Carter Street precinct is an established industrial area with mainly large warehouse facilities offering logistics services. The warehouses north of Carter Street provide a mix of modern and dated facilities, with older warehouses located along the M4 Motorway south of Carter Street.

As there is a westward shift in Sydney industrial development, the existing uses do not effectively capitalise on the adjoining significant cultural, sporting, social and transport infrastructure of Sydney Olympic Park.

The Carter Street precinct was proposed as an Urban Activation Precinct as it:

- supports the broader Sydney Olympic Park Specialised Precinct which is designated to accommodate significant jobs and housing growth
- connects to Sydney Olympic Park and parklands, which offer a high level of amenity in a natural environment

- is adjacent to major sports, recreational and entertainment facilities
- optimises the significant government infrastructure investment in the transport network including, Olympic Park Train Station, existing bus services, M4 Motorway and Parramatta Road
- responds to strong local market demand for additional employment and housing.

Endorsement of the precinct as an Urban Activation Precinct by the NSW Government in March 2013 initiated the preparation of this planning framework that will facilitate development of the precinct as a new, high quality urban community.

## 1.3 Report structure

---

This planning report is structured as follows:

- **Part 1 Introduction:** outlines the urban activation initiatives and why Carter Street was selected to accommodate further growth
- **Part 2 Precinct overview:** provides a description of the precinct and its context
- **Part 3 Precinct proposal:** provides a description of the proposal, including key planning and development controls
- **Part 4 Consultation:** provides an overview of key issues and concerns raised through development of the proposal
- **Part 5 Key considerations:** outlines how key issues have been investigated and addressed
- **Part 6 Infrastructure summary:** outlines the infrastructure items required to support the proposal
- **Part 7 Next steps:** outlines what will happen after the exhibition of the proposal.

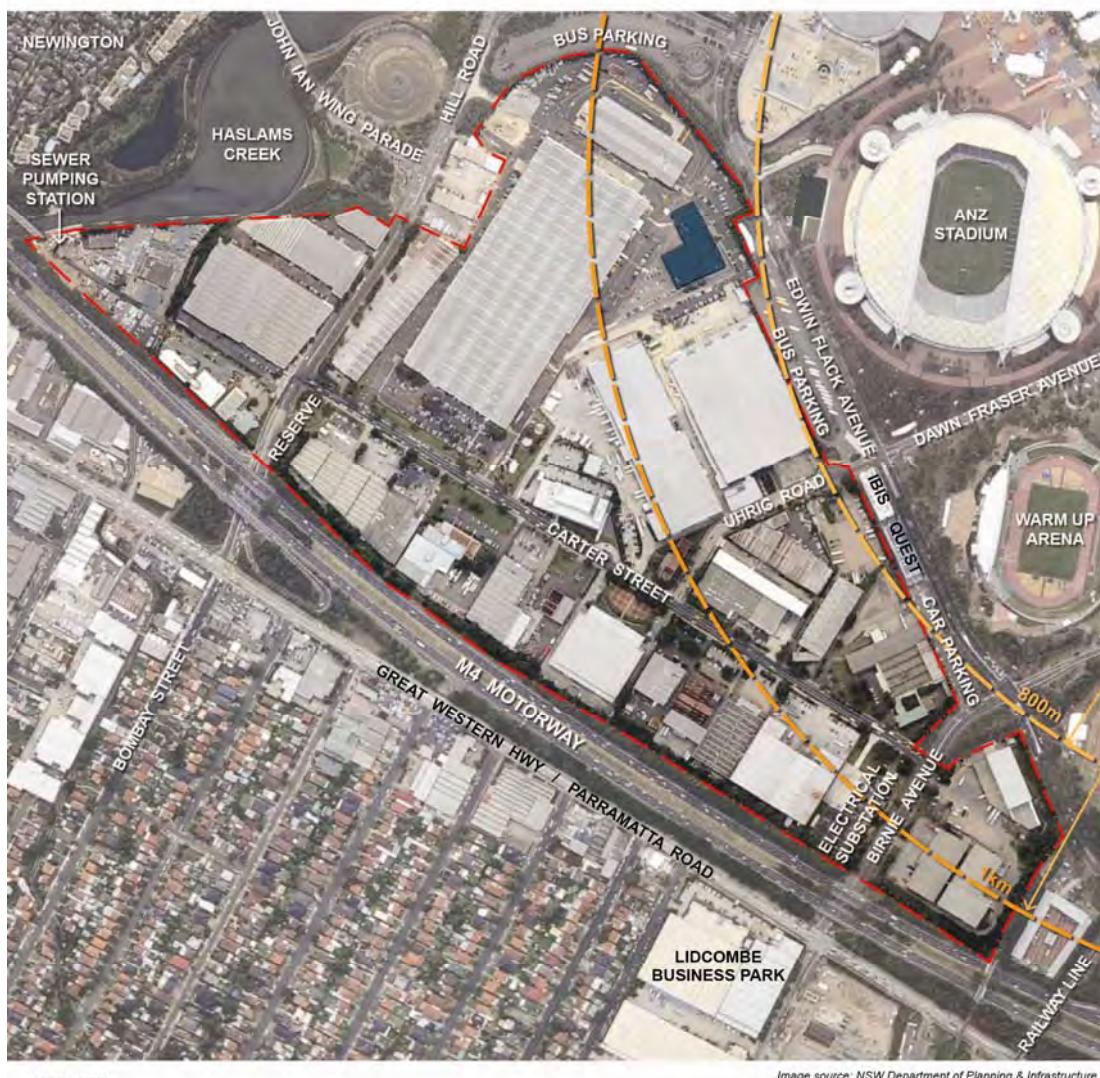
The planning report is supported by a number of appendices. These include:

- an explanation of intended effect, which provides an overview of the statutory changes proposed
- a site specific development control plan (DCP), which will provide detailed guidance for the future development of the precinct and help secure key outcomes such as new parks, streetscape and design quality, and
- specialist consultant studies on matters such as traffic and transport, noise, odour, contamination, economic feasibility and community facilities, which demonstrate that the precinct is or can be made suitable for the intended land uses.

## 2 Precinct overview

### 2.1 Site context

The Carter Street Urban Activation Precinct comprises some 52ha of land directly south west of Sydney Olympic Park (see **Figure 3**) within the Auburn local government area. The precinct is bounded by Haslams Creek to the west, an existing bus parking area adjacent to Old Hill Link to the north, Edwin Flack Avenue to the north east, a disused rail line to the east and the M4 Western Motorway to the south west.



**Figure 3** Aerial photo of the precinct

There are 14 landowners within the precinct. The 52ha precinct comprises some 40 land parcels including three major parcels of 12.0ha, 8.0ha and 3.1ha respectively. Some 26 parcels vary from 0.6 to 1.8ha each. There is an Ausgrid substation on the corner of Carter Street and Birnie Avenue. Auburn Council owns a small reserve at the corner of Hill Road and Carter Street, as well as land at the southern corner adjacent to the M4 Motorway. Sydney Water Corporation has a small site at the western-most corner of the precinct which houses a pumping station.

Parallel to the southern boundary of Carter Street is a 40 metre wide services easement that houses high pressure gas and oil pipelines and electricity infrastructure. The pipelines are licensed under the *Pipelines Act 1967* and the *Gas Supply Act 1996*. The easement cannot be built upon and although not proscribed under the provisions of *State Environmental Planning Policy (Infrastructure) 2007*, there is an obligation for a risk assessment for any development within the easement under Section 55 of the Infrastructure SEPP.



**Figure 4 Carter Street precinct looking south east along Edwin Flack Avenue**

The topography of the precinct rises from Haslams Creek along the western edge (RL 2.0m) AHD to the east toward Edwin Flack Avenue which is located on a ridge. The highest point of the precinct is at the eastern end adjacent to Birnie Avenue at RL 24.0m AHD. Along the southern edge of the precinct there is a drainage swale between existing industrial buildings and the elevated M4 Motorway. Over the years the landform within the precinct has been modified to create individual platforms for large single level industrial buildings.

Previous flood studies conclude that the 1 in 100 year flood level for Haslams Creek is RL 2.7m leading to a planning flood level of RL 3.0m AHD. Sydney Water advise that as areas upstream of the precinct are flood affected, a number of flood mitigation options, including channel widening/deepening at the downstream end of the M4 Motorway will be required to be considered as part of an integrated and strategic approach to development of the precinct. This will affect some of the land west of Hill Road.

Vegetation within the precinct is limited to trees and planting along verges and within the front setbacks of existing buildings, in particular along both sides of Carter Street and to the east of Hill Road (see **Figure 5**). The visual impression of Carter Street is of a relatively continuous green edge to each side formed by a diverse range of tree types. The new landscape of Sydney Olympic Park which comprises a mix of remnant vegetation with extensive new plantings has the strongest visual influence on the precinct and is the dominant form along the northern boundary.

On the western edge new plantings around Haslams Creek have established as part of environmental restoration. As this landscape continues to mature, it is envisaged that relatively self-sustaining plant communities will develop, with high habitat values as well as high visual amenity. Along the southern edge of the precinct are the vegetated embankments adjacent to the M4 Motorway.



Landscape & open space character

ELEVATION	PLAN	KEY	ELEVATION	PLAN	KEY	ELEVATION	PLAN	KEY
		<b>1. CLOSED CANOPY SCREEN</b> Dense evergreen foliage mature trees form visual barrier			<b>4. BUSINESS PARK OPEN SPACE</b> Amenity planting, diverse character associated with landscape setbacks			<b>7. HASLAMS CREEK ENVIRONMENTAL ZONE</b> Revegetation to preserve and enhance the Haslams Creek riparian zone
		<b>2. OPEN CANOPY SCREEN</b> Semi mature single trunk evergreen native trees with grassy ground planting in formal arrangement			<b>5. INDIVIDUAL MATURE TREES IN OPEN SPACE</b> Mature trees associated with built form Business Park open space			<b>6. FEATURE PLANTING AND HERITAGE OVERLAY</b> New landscape areas associated with Olympic Precinct landscape character
		<b>3. EDGE PLANTING</b> Planting in landscape setback zones to articulate built form						

**Figure 5** Landscape and open space character

Carter Street is the main east-west street through the precinct. Uhrig Road connects to the north to Dawn Fraser Avenue providing access to Sydney Olympic Park, in particular the emerging town centre and train station. The north eastern parts of the precinct are within 1km of Olympic Park Train Station which provides regular passenger shuttle services to Lidcombe.

The precinct has direct access via Hill Road to the M4 Motorway for westbound traffic and from the M4 Motorway for eastbound traffic. The site can be accessed from Parramatta Road via Hill Road and Birnie Avenue from both directions.

As part of the recently announced WestConnex project, the M4 Motorway will be widened to four lanes in each direction between Church Street, Parramatta and Homebush Bay Drive. A new eastbound access ramp from Hill Road will be constructed as part of the Stage 1 construction works (2015-2019) improving the precinct's regional accessibility.

### Existing uses and built form

The site is currently used predominantly for light industry and warehousing with associated offices. The existing built form is mainly one to three storey contemporary commercial and warehouse buildings on large lots.

The buildings to the south of Carter Street are older mainly two storey buildings on lots of around 8,000sqm.

To the north of Carter Street, there are significantly larger and newer warehouse buildings, as well as the recently completed NSW Rural Fire Services headquarters. On the east side of Birnie Avenue are the larger warehouse buildings of Swire Cold Storage that are the equivalent of 4-6 storeys. To the west of Hill Road are contemporary two storey office/warehouse and storage buildings (including TetraPak and DHL) and open storage areas to the presently inaccessible Haslams Creek edge.



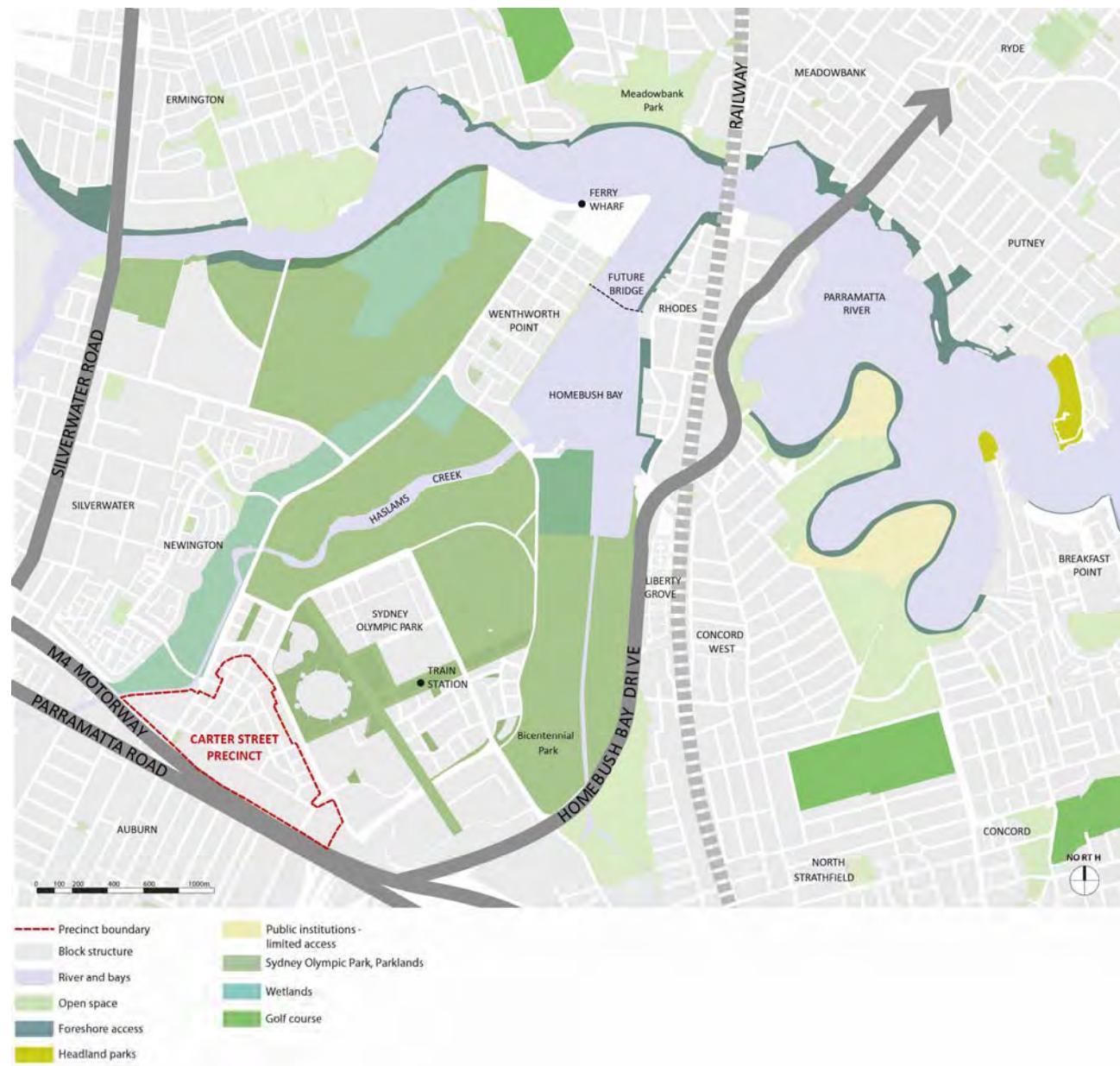
**Figure 6 Existing buildings within the precinct**

## Existing planning controls

Under Auburn Local Environmental Plan LEP 2010 the Carter Street precinct is currently zoned B7 Business Park north of Carter Street which permits a range of office and light industrial uses and facilities or services to meet the day to day needs of workers in the area, IN2 Light Industrial south of Carter Street and west of Hill Road which permits a wide range of light industrial, warehouse and related uses including educational establishments, and RE1 Public Recreation for the small reserve at the corner of Carter Street and Hill Road.

## 2.2 Surrounding land uses

The Carter Street precinct is strategically located close to the geographic centre of the Sydney metropolitan region approximately 14km west of the Sydney CBD and 6km east of the Parramatta CBD. Under the *Draft Metropolitan Strategy for Sydney to 2031*, the precinct is recognised as being part of the broader Sydney Olympic Park Specialised Precinct, which adjoins the Rhodes Specialised Precinct to the north east.



(Source: Based on plan prepared by Government Architect's Office)

**Figure 7 Location plan**

## Sydney Olympic Park

Sydney Olympic Park directly adjoins the precinct to the north east, providing access to major cultural, entertainment, recreation and sporting facilities, as well as Olympic Park Train Station and the emerging town centre. Sydney Olympic Park Master Plan 2030 has been prepared to guide the evolution of Sydney Olympic Park into a specialist economic centre and urban parkland. Under the master plan more than 31,500 jobs will be situated at Sydney Olympic Park, with about 6,000 new dwellings constructed to house approximately 14,000 residents in residential buildings up to 30 storeys.

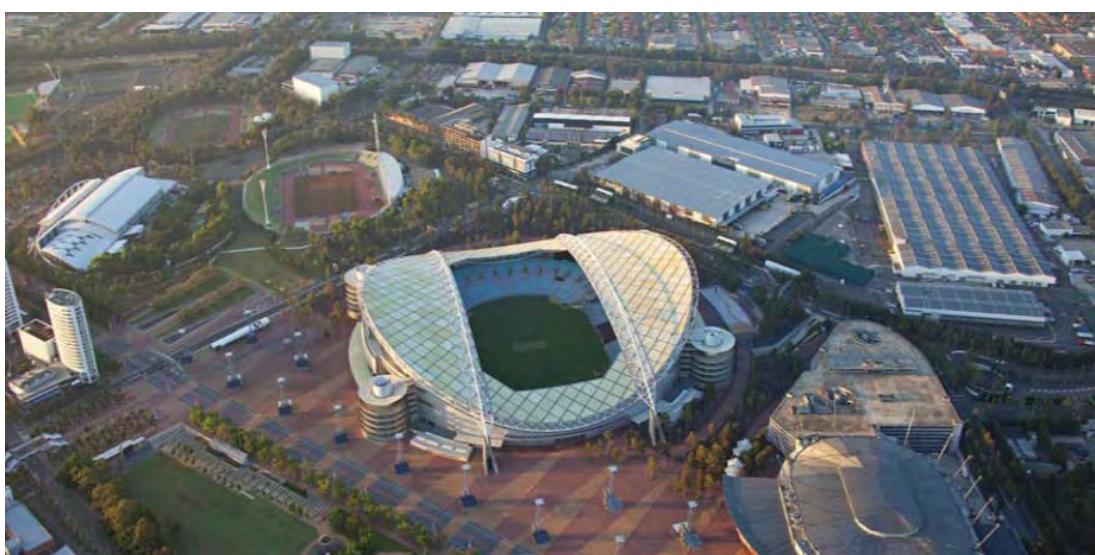
**Figure 9** identifies the land use and built form provisions under Sydney Olympic Park Master Plan 2030 which apply to land adjacent to the precinct. The existing and planned land uses within Sydney Olympic Park are discussed in further detail below.

Directly to the north of the precinct is an existing at grade bus parking facility and further north beyond Old Hill Link is the Homebush Bay Liquid Waste Treatment Plant and the Auburn Resource Recovery Centre (refer Section 5.2). Under Sydney Olympic Park Master Plan 2030 this area is planned to be redeveloped as a residential neighbourhood with supporting retail and commercial uses in buildings of up to seven storeys. The existing bus parking would be consolidated allowing connections to be provided from this new residential area to the Carter Street precinct.

The land within Sydney Olympic Park to the south of Edwin Flack Avenue which directly abuts the precinct is currently used for at grade bus parking. Under Sydney Olympic Park Master Plan 2030 this area can be redeveloped as a two storey bus and car parking facility on the north side of Dawn Fraser Avenue with hotels and serviced apartments of up to seven storeys on the south side of Dawn Fraser Avenue.

The areas to the north of Edwin Flack Avenue house ANZ Stadium, Acer Arena and other major public spaces, as well as sports facilities including the Aquatic Centre, Athletics Centre and Athletics Warm Up Arena (see **Figure 8**). The area surrounding ANZ Stadium and Acer Arena is not planned for any significant redevelopment. In contrast, the area surrounding the athletics facilities is planned for a range of educational and associated uses with building heights up to six storeys.

To the east of the precinct adjacent to the Swire Cold Storage facility is the Sydney Olympic Park Place Management Centre. The master plan identifies this site for future venue expansion with a two storey height limit. The disused rail line which forms the eastern boundary of the precinct is identified under Sydney Olympic Park Master Plan 2030 as a possible future pedestrian and cycle link providing access to the south along the rail embankment and bridge which crosses the M4 Motorway and Parramatta Road.



**Figure 8** Aerial view of Sydney Olympic Park with the Carter Street precinct to the right



**Figure 9 Sydney Olympic Park Master Plan 2030 – land uses and controls**

## Newington

To the west of Carter Street across Haslams Creek is the former Sydney Olympic Athletes Village that has been transformed into the residential suburb of Newington comprising medium density housing. This area is unlikely to be further redeveloped in the medium to long term.

## Lidcombe

To the south of the precinct beyond the M4 Motorway and Parramatta Road is the suburb of Lidcombe comprising industrial and business uses predominantly along Parramatta Road and beyond that low density housing. Lidcombe town centre and Lidcombe Train Station are located approximately 2.5 kilometres south of the precinct. Auburn Council is currently progressing a rezoning of the Lidcombe town centre. If

approved, up to 2,820 new dwellings and 64,500sqm of commercial floor space could be built in the town centre.

### **Wentworth Point**

Further to the north of Sydney Olympic Park is the Wentworth Point peninsular which is currently being developed for medium and high rise residential apartments. The land at the end of the peninsula was also identified as an urban activation precinct. Plans for that precinct include residential development of up to 2,300 dwellings, maritime uses and substantial areas of foreshore open space. At its completion, the entire Wentworth Point peninsula could accommodate up to 9,500 dwellings. This also includes a new local centre on SOPA land at the ferry wharf.

In March 2013 approval was granted to the construction of a new bridge across Homebush Bay for pedestrians, cyclists, buses and emergency vehicle access, sometimes referred to as a 'green bridge'. This would effectively link Wentworth Point to the Rhodes peninsula. To be financed by a consortium of private landowners in Wentworth Point, the bridge is intended to improve access from Wentworth Point to shops, employment and public transport in Rhodes. The bridge would also significantly reduce the walking distance between Wentworth Point and Rhodes Train Station. It could also provide Rhodes residents easier access to Sydney Olympic Park and parklands.



**Figure 10 Wentworth Point, north of Sydney Olympic Park**

# 3 Precinct proposal

## 3.1 Vision and principles

---

A vision for the precinct has been developed to guide future development of the Carter Street Urban Activation Precinct:

*The urban renewal of the Carter Street precinct will support Sydney Olympic Park in its role as a Specialised Centre / Town Centre and provide a mix of housing, employment and retail services with easy access to public transport, the regional road network and world class open space, entertainment and recreational facilities.*



Figure 11 Proposed John Ian Wing Parade extension and Hill Road park

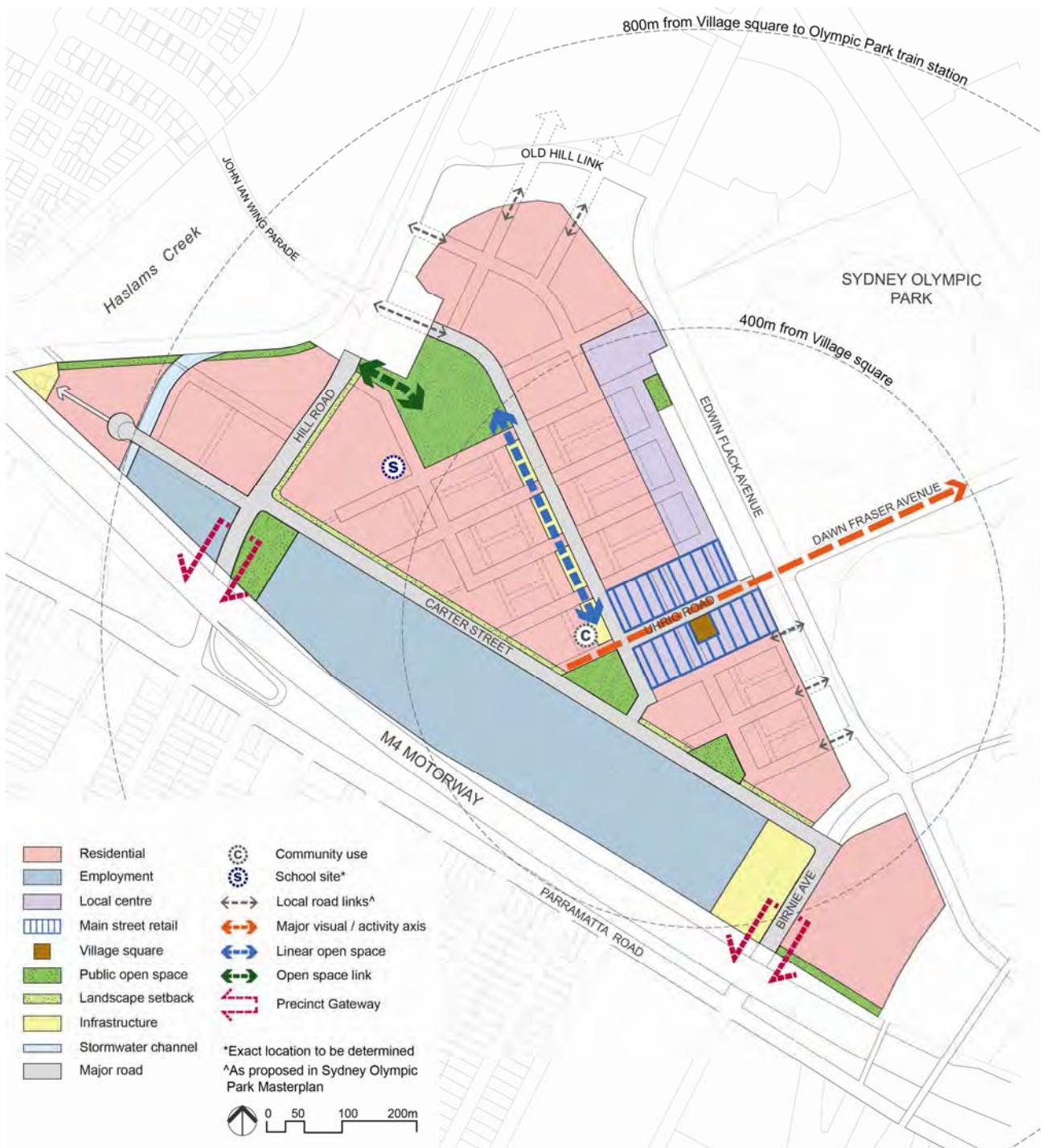
Supporting the vision are eight principles that provide further high level guidance for future development:

- develop the precinct as an integral part of the broader Sydney Olympic Park Specialised Precinct
- create a network of unique, memorable and high quality places
- create a compact, walkable urban community within close proximity to Sydney Olympic Park supported by an activity centre comprising 'main street' retail and a village square
- provide a mix of medium and high density housing types to increase housing choice
- create a new employment area south of Carter Street with access to Parramatta Road and the M4 Motorway

- incorporate a network of publicly accessible open spaces
- comprise a diverse and innovative built form that provides a high quality living environment
- incorporate sustainability measures that reduce impacts on the natural environment.

### 3.2 Urban structure and land use

The indicative urban structure of the precinct shown at **Figure 12** will accommodate a balanced range of land uses to meet NSW Government objectives set out in the *Draft Metropolitan Strategy for Sydney to 2031* to deliver new housing (Objective 5) and to provide capacity for job growth (Objective 10). A summary of the key elements of the structure plan is set out in **Table 1**.



**Figure 12** Indicative Structure Plan

**Table 1 Key elements**

Element	Description
<b>Residential</b>	<ul style="list-style-type: none"> <li>• A high density urban community with potentially over 5,500 dwellings</li> <li>• Private and communal open space for residents within urban blocks</li> <li>• Walkable neighbourhood to shops, parks and Olympic Park Train Station</li> </ul>
<b>Employment</b>	<ul style="list-style-type: none"> <li>• 11.4 hectares of highly accessible land for employment uses</li> <li>• Corporate offices, business and technology parks, retail and light industrial uses visible from the M4 motorway</li> </ul>
<b>Open Space</b>	<ul style="list-style-type: none"> <li>• A significant new park of 1.8 hectares at Hill Road for recreation and water sensitive urban design initiatives</li> <li>• New linear foreshore reserve along Haslams Creek south of John Ian Wing Parade</li> <li>• Village square integrated with main street shopping at Uhrig Road</li> <li>• Village park located at Carter Street/Uhrig Road as an urban landmark space</li> </ul>
<b>Retail and Community</b>	<ul style="list-style-type: none"> <li>• Retail centre along Uhrig Road with 12,000sqm of shops and services</li> <li>• Active street level uses adjacent to Hill Road park, village park and Uhrig Road</li> <li>• Community centre located adjacent to the village park at Uhrig Road</li> <li>• New primary school</li> </ul>
<b>Built form</b>	<ul style="list-style-type: none"> <li>• Building heights ranging from 4-20 storeys</li> <li>• Townhouses and 4-6 storey apartments generally on east-west streets for good solar access</li> <li>• Medium rise 6-8 storey apartments on the main streets and parks</li> <li>• Taller 12-20 storey landmark buildings at key locations, entries and important corners</li> <li>• Varied building heights for visual interest and dynamic urban form</li> <li>• Innovative, quality architecture and ecologically sustainable design driven outcomes</li> </ul>
<b>Movement network</b>	<ul style="list-style-type: none"> <li>• New streets to create a permeable movement network</li> <li>• A series of upgrades to intersections to improve traffic flow</li> <li>• Bus priority and new routes to train stations</li> <li>• A publicly accessible foreshore with pedestrian and cycling paths linked to existing network</li> </ul>

The existing street pattern will be retained and extended. A new collector road is proposed as an extension of John Ian Wing Parade intersecting with Uhrig Road at a new local centre. Uhrig Road, a continuation of the Dawn Fraser Avenue axis from Sydney Olympic Park, will be developed as the 'main street' retail spine with active uses and frontages and a village square to grow the sense of community. At the junction of Uhrig Road and Carter Street a community use site has been identified adjacent to a new village park. The local centre uses will continue along the northern boundary, at the interface with Edwin Flack Avenue and to act as a barrier at the lower levels.

A new primary school for the local area will be provided within the precinct, potentially facing the new 1.8ha park on Hill Road, although the exact location is yet to be determined.

Residential uses will be accommodated on the north side of Carter Street with frontage to new cross streets radiating from the John Ian Wing Parade extension. Residential is also proposed on the eastern side of Birnie Avenue and the western side of Hill Road, to take advantage of the connection to the expanded recreation corridor.

Employment uses will be retained and expanded on the south side of Carter Street along the M4 Motorway corridor. A broader range of business uses is proposed to take advantage of both proximity to Parramatta Road and the exposure to the motorway and over the long term, potential to provide local services and job opportunities for the local community. These lower order uses can complement the development of the Sydney Olympic Park Town Centre.

### 3.3 Built form

---

It is proposed to encourage a variety of building heights and forms to accommodate residential, employment and retail uses.

A range of detailed built form provisions have been prepared to ensure a high quality, attractive and comfortable urban environment is achieved, as set out in the site specific DCP at **Appendix B**.

Key features of the built form controls include (refer **Figure 13**):

- the definition of a three-dimensional building envelope through controls such as building height, depth and length
- a residential building typology primarily comprising perimeter block forms enclosing internal courtyards and punctuated by a small number of slender apartment buildings up to 20 storeys
- management of the interface between the public and private domains to ensure the private domain activates and engages with the public domain
- low to medium rise commercial buildings to complement the quality and character being attained at Sydney Olympic Park
- detailed design requirements for buildings including materials and finishes.

Most buildings will be between 4-8 storeys with lower buildings adjacent to Haslams Creek and the M4 Motorway. Taller buildings are to be located at key landmark sites at parks, Uhrig Road and defining entries to the precinct. The 30 storey residential towers of Sydney Olympic Park Town Centre are to remain the dominant built form elements of the wider Carter Street / Sydney Olympic Park / Homebush Bay skyline.



**Figure 13** Illustrative Plan

A range of dwelling types is envisaged, from townhouses to medium and high rise apartments that will offer a range of housing options creating a diverse and sustainable community. Articulation zones will be required to complement building mass and emphasise key design elements such as entry points. The

interface between buildings and public spaces will be designed to create active safe streets and encourage flexibility in design for changing uses at ground level.

Proposals for individual residential or mixed use developments will be required to comply with SEPP 65—Design Quality of Residential Flat Buildings and its companion Residential Flat Design Code, which provides guidance on matters relating to residential amenity, including solar access and visual privacy.

A ten metre landscape setback for deep soil planting is proposed on the north side of Carter Street to create a landscaped avenue for new development and to retain existing native trees in the current setback zones. This will act as a screen and buffer between employment and residential uses. The amenity of residential uses in close proximity to existing and new employment uses is to be protected by appropriate siting of buildings, boundary treatments, setbacks and landscaping.

Employment uses will be able to take advantage of the exposure to the adjoining motorway, and provide surface parking in landscaped surroundings on the services easement.



Figure 14 Proposed built form along Hill Road near Carter Street

### 3.4 Access and movement

As an existing industrial precinct, the current primary transport mode is private vehicles, trucks and cars that utilise the existing regional and local road networks. Existing public transport comprises bus and train.

In the future, to promote a more sustainable modal split and ensure that growth within the precinct can be supported from a transport and access perspective, measures are proposed to manage and provide a balanced approach to transport impacts including infrastructure capacity upgrades over the long term and travel behaviour change by promotion and incentives. All of the proposed transport initiatives, together with other infrastructure requirements are outlined in the summary in **Section 6**.

## Regional and local road network issues

The key road network issues relating to the precinct are:

- the capacity of the regional road network
- the capacity of the local road network, including at key intersections
- integration with surrounding land uses, particularly Sydney Olympic Park, and
- the impact of the recently announced WestConnex project.

The regional road network provides access to the precinct via five main ‘gateways’ – Parramatta Road/Hill Road, Parramatta Road/Birnie Avenue, M4 Motorway/Hill Road, Homebush Bay Drive /Australia Avenue and Holker Street/Silverwater Road – that are currently operating at or close to capacity. Hill Road and Birnie Avenue provide the principal access points to the Carter Street precinct (see **Figure 15**). However access route capacity is shared with the other adjacent development areas.

The capacity of the regional road network which provides access to the whole subregion is impacted by traffic generated by developments adjacent to the subregion as well as by major events at Sydney Olympic Park and through traffic using strategic road network links including the adjacent M4 Motorway and crossings of the Parramatta River.

The WestConnex project to expand the M4 Motorway includes new access ramps that will improve connections between Sydney Olympic Park and the Carter Street precinct and the motorway network. The proposed ramps are:

- new on-ramp from Hill Road (southbound) to the M4 Motorway (eastbound)
- loop on-ramp from Homebush Bay Drive (southbound) to the M4 Motorway (westbound) replacing the signalised right-turn.

Further road widening and intersection modifications are planned that will impact access to Carter Street on Hill Road. Road intersection upgrades, including those on Hill Road, will be detailed in consultation with the WestConnex team and Sydney Motorways Project Office team. It is projected that the surrounding network and main gateways will remain congested in the future, despite major road infrastructure projects, such as WestConnex.

A traffic study has been undertaken (refer **Appendix D**), which analysed vehicle queuing levels using intersection modelling to estimate the amount of additional traffic that the current road network could sustain to support development within the Carter Street precinct. The two main gateway intersections to the precinct at Parramatta Road/Hill Road/Bombay Street and Parramatta Road/Birnie Avenue, are likely to reach critical levels when the commercial development in the Carter Street precinct is approximately 33% of its full theoretical floor space. However, this is due to the combined growth of the various developments in the area, and is influenced by the amount of traffic relief that the WestConnex project can provide to Parramatta Road.

Based on the results of the intersection modelling of the two main gateway intersections and other local intersections in the precinct, roads will begin to experience upstream queuing when the commercial development in the Carter Street precinct is approximately 55% to 65% of its full theoretical floor space. However, as this figure is likely to either exceed or reflect the actual take-up rates of the employment lands, this percentage has been adopted for modelling purposes. In this regard it is important to note that the traffic assessment has modelled a ‘worst case’ scenario, that assumed that 65% of the employment lands would alter to high intensity offices uses, yielding the highest number of vehicles.

The traffic study identifies staged improvements to local and regional road networks needed to support the proposed residential and employment-related development in the Carter Street precinct (see **Figure 15**). It is noted that these improvements to road transport infrastructure, all for investigation and approval from the State government, would have a positive impact on traffic movements into and out of the precinct.

The proposal also includes a new street network, to be implemented in stages (see **Figure 16**). The proposed street network has considered the topographical constraints and opportunities, the existing

current development patterns and Sydney Olympic Master Plan 2030 road access proposals. The new street network will provide convenient and direct connections to adjacent precincts, particularly Sydney Olympic Park, and will accommodate proposed bus routes. It is also proposed to extend John Ian Wing Parade south eastwards through to Uhrig Road, to improve connections between the precinct and suburbs to the north west, including Newington. The site specific DCP at **Appendix B** includes the requirements for these new streets.



#### Local road improvements

- 1 Hill and Carter Streets
- 2 John Ian Wing Parade extension
- 3 Birnie Avenue and Carter Street
- 4 Uhrig Road and Edwin Flack Avenue

\*including new eastbound ramp onto M4 proposed as part of WestConnex

#### Regional roads for investigation

- 5 Homebush Bay Drive and Australia Avenue
- 6 Parramatta Road and Birnie Avenue
- 7 Hill Road and Parramatta/M4 Motorway\*
- 8 Holker Street and Silverwater Road

**Figure 15** Key local and regional intersections

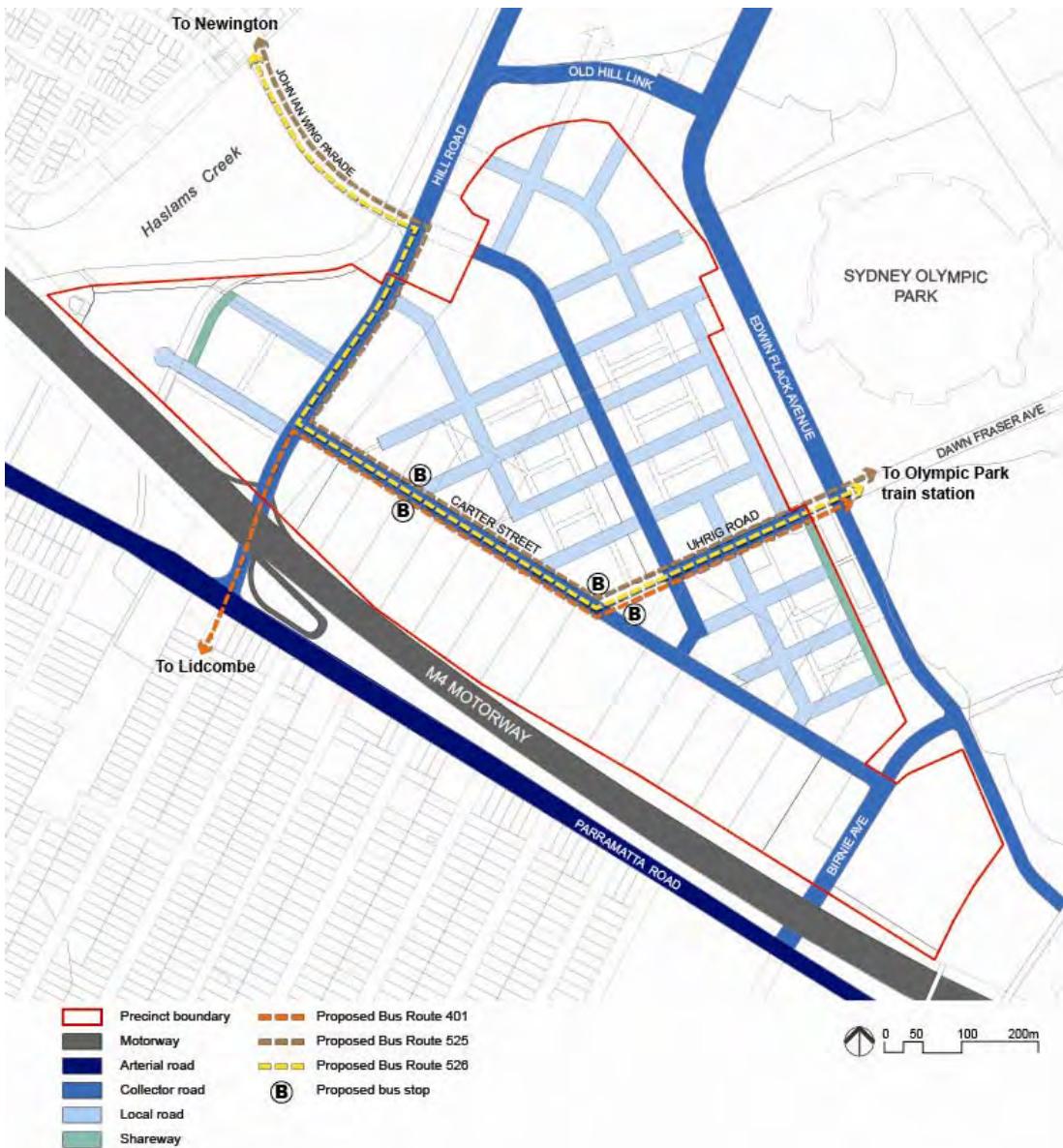


Figure 16 Proposed street network

## Public transport

Public transport access to and from the precinct comprises train, bus and to a lesser extent ferry services.

Olympic Park Train Station is within 800m walking distance of parts of the Carter Street precinct. It was built to cater for large crowds accessing Sydney Olympic Park. The rail line operates on a spur line from the main Western Line. In general, regular passenger services operate as a shuttle to Lidcombe Train Station where passengers transfer to Western Line services. The use of the train service is, therefore, limited by the need to change trains at Lidcombe. Notwithstanding this limitation, Olympic Park Train Station is an important transport asset, with a 10 minute frequency offering a good service at peak hours.

The capacity of train services at Olympic Park Train Station, that are accessible to Carter Street precinct residents and employees, will have sufficient spare capacity to accommodate forecast increases in commuters. Special event trains operate direct to and from Lidcombe, Strathfield and Central for large events at Sydney Olympic Park.

Sydney Olympic Park Master Plan 2030 recognised the impact of road network capacity on the ability to realise the development yield outlined in that plan. A cap on the amount of high trip generating commercial space will be applied until funding is secured for feasibility studies for construction of new high capacity public transport line(s) to facilitate increased travel by non-car modes. A proposal to consider a

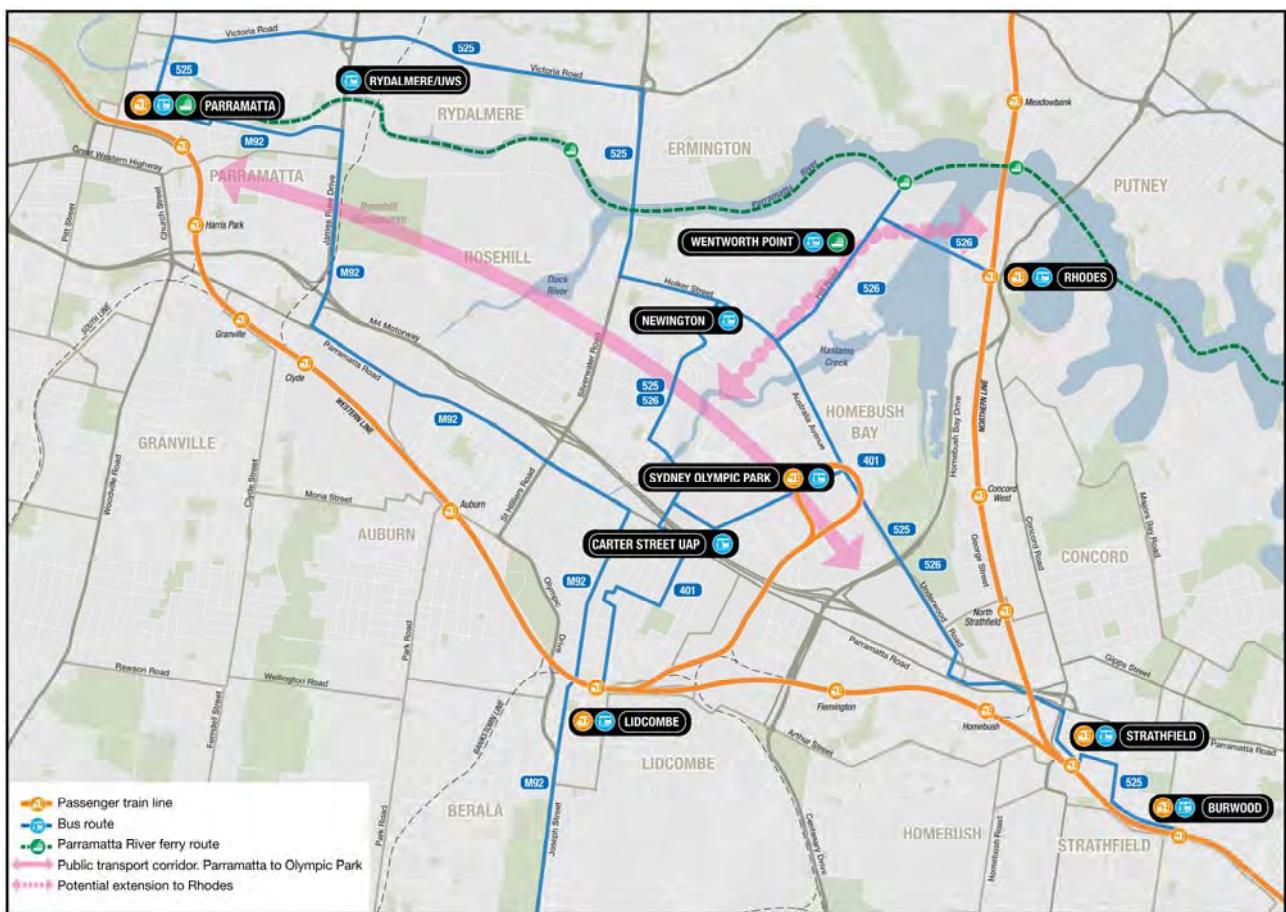
Western Sydney Light Rail Network, with an option to provide a branch line to Olympic Park, Carter Street and Rhodes, would provide direct connections to Parramatta and other destinations such as Westmead and Rydalmere (see **Figure 17**).

Bus services currently operate along Carter Street and Edwin Flack Avenue. Route 401 travels along Carter Street and Routes 525 and 526 along Edwin Flack Avenue (refer **Figure 16**). Existing bus frequencies create an adequate service, but passengers still need to refer to the timetable to avoid missing the bus and having an extended wait. Only Route 525 operates into the evening.

The subregion has existing bus services that could increase their service frequency and adjust routes to improve coverage and respond to increased patronage, such as relocating the Route 526 service to Carter Street. The proposed Homebush Bay bridge will assist in connecting Wentworth Point with Sydney's public transport network by providing pedestrian, cycle and bus connections to Rhodes Train Station.

Changes to the local bus network have been proposed to improve accessibility to, from and within the area for residents and workers. They are also designed to improve connections to surrounding train stations, Sydney Olympic Park Wharf and movement between Carter Street precinct, Sydney Olympic Park and Wentworth Point precinct.

Ferry services operate along the Parramatta River between Rydalmere Wharf and Circular Quay during weekdays and weekends stopping at Sydney Olympic Park Wharf at the northern end of Wentworth Point and are connected to the precinct by the Route 526 bus service. The ferry service also stops at Milsons Point Wharf on its way to Circular Quay giving access to North Sydney employment. However, the wharf is located 3.5km from the precinct, and services at peak travel times are currently limited by their frequency.



**Figure 17 Existing and proposed public transport networks**

## Pedestrian and cyclist infrastructure

Whilst most roads within the precinct have footpaths and crossing opportunities at traffic signals, the long block lengths and lack of mid-block crossing opportunities makes local walking trips difficult. High traffic volumes and large numbers of trucks associated with the current industrial use also reduce pedestrian amenity.

The Homebush Bay subregion has a high standard of cycle facilities, as a legacy of transport planning for the 2000 Olympics. These facilities pass by the Carter Street precinct, but a gap exists in the network along Carter Street and Uhrig Road to extend cycle routes in the future. For the Carter Street precinct, additional connections are proposed to connect it into the wider area and allow east-west routes to pass through the precinct.

Redevelopment of the precinct is expected to have a positive impact on connectivity for pedestrians and cyclists through enhanced footpaths, shared paths, crossing points and links to destinations, such as Olympic Park Train Station, the ferry wharf and to the Haslams Creek foreshore. The aim is to increase street activity, reduce car use and improve amenity through the creation of a walkable and cycle-friendly environment providing both internal and external links to the surrounding area as indicated in **Figure 18**.



**Figure 18** Pedestrian and cycle network

## Promoting sustainable travel patterns

The traffic study advises that, despite the recommended road upgrades described above, there will be limited spare capacity for growth in the road network beyond 2031. Therefore, achieving a shift to sustainable transport modes (public transport, walking and cycling) and a reduction in private vehicle use is fundamental to accommodating growth within the precinct.

The precinct has the potential to achieve a future mode share that minimises its impact on the congested road network and takes advantage of the other transport opportunities available. The overall future mode share varies by time of day and trip purpose, but is summarised for all purposes for the AM peak as follows:

- vehicle driver 52%
- vehicle passenger 14%
- train 9%
- ferry/light rail 5%
- bus 3%
- walk 16%
- cycle 1%.

Strategies to reduce traffic demand are recommended to delay the need for the costly upgrades and preserve as much road network capacity as possible for future growth. Potential solutions include the following.

- A significant public transport scheme to reduce car driver mode share (in addition to local bus improvements).
- Higher public transport frequencies assisted by dedicated public transport priority to reduce car driver mode share.
- Reduced parking rates to encourage the use of alternative modes of transport (requires one of the above to provide a suitable alternative).
- Encourage changed travel behaviour of drivers eg peak spreading (Sydney Olympic Park is already achieving a high degree of peak spreading, further peak spreading may be difficult to rely upon to produce the necessary change and result in unpleasant transport conditions).

If a 10% reduction in car driver mode share could be achieved for journeys to work (and lower reductions in other trip purposes) on top of the currently assessed changes, the transport requirements of the total proposed development for the Carter Street precinct could be met. However, this would require substantial increases in funding for public transport infrastructure.

The traffic study identifies three ways of encouraging travel behaviour change to reduce car use and promote walking, cycling and public transport use within the precinct.

- Provide new owners with a transport package including information and discount

One of the objectives of the Transport Assessment study was to highlight ways to reduce the level of private car usage in favour of more sustainable modes of travel such as walking, cycling and public transport. A method of achieving this is personalised marketing strategies to assist in modifying travel behaviour through communicating relevant travel choice information to the community. Marketing would begin through the provision of travel information kits (Travel Access Guides) to all new residents in the precinct. Each developer will also be required to produce a Workplace Travel Plan and provide the relevant information to employees.

- Install way-finding and directional signage throughout the precinct, especially at site entry points

Way-finding signage would be installed at entry points to the precinct to allow people to navigate their way around. A map will also be installed to allow people to know about the pedestrian and cycle connections under the M4 Motorway and to train stations in the area.

- Car share schemes

Car sharing reduces the total number of fleet vehicles for an employer and reduces the use of private vehicles for commuting. Car share schemes have been established in other parts of Sydney including from Maroubra to Chatswood and Manly to Summer Hill and Bondi.

## Timing

An assessment of the required staged transport improvements are shown in **Table 2**. This list requires further consultation with agencies, but gives a summary of the transport improvements required in the short, medium and long term.

**Table 2 Staged transport improvements**

Timeframe	Road and intersection	Public transport	Comments
<b>Short Term (by 2015/start of precinct development)</b>	<ul style="list-style-type: none"> <li>• Intersection of Hill Road and Carter Street</li> <li>• Intersection of Birnie Avenue and Carter Street</li> </ul>	<ul style="list-style-type: none"> <li>• Bus frequency improvements</li> <li>• Bus stop infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing current issues/enabling construction traffic</li> </ul>
<b>Medium Term (between 2016 and 2021)</b>	<ul style="list-style-type: none"> <li>• Intersection of Edwin Flack Avenue, Dawn Fraser Avenue and Uhrig Road (to suit development timeframe)</li> <li>• Intersection of Carter Street and Uhrig Road (to suit development timeframe)</li> <li>• Intersection of Parramatta Road and Birnie Avenue (approx 2016)</li> <li>• WestConnex (as per project timeframe) (2015-2019 Stage 1)</li> <li>• Hill Road southbound on-ramp extension (2015-2019 Stage 1)</li> <li>• Intersection of Parramatta Road, Hill Road and Bombay Street (approx 2018)</li> <li>• Intersection of Hill Road and Old Hill Link (2015-2019 Stage 1)</li> </ul>	<ul style="list-style-type: none"> <li>• Bus priority</li> <li>• Route 526 extension</li> <li>• Sydney Olympic Park Wharf upgrade</li> <li>• Bus frequency improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Bus network to provide public transport network capacity until new line can be opened</li> <li>• Gateway intersection upgrades required early in medium-term</li> <li>• Access intersection upgrades to match development timeframe</li> <li>• Uhrig Road intersection upgrades to assist pedestrian and bus movement</li> </ul>
<b>Long Term (after 2021)</b>	<ul style="list-style-type: none"> <li>• Intersection of Parramatta Road, Hill Road and Bombay Street (further upgrade, approx 2022)</li> <li>• Intersection of Parramatta Road and Birnie Avenue (further upgrade, approx 2023)</li> <li>• M4 Motorway capacity upgrade (approx 2023)</li> <li>• Intersection of Birnie Avenue and Carter Street (further upgrade, approx 2025)</li> <li>• Intersection of Edwin Flack Avenue and Birnie Avenue (approx 2028)</li> <li>• Intersection of Hill Road and John Ian Wing Parade (further upgrade, approx 2028)</li> </ul>	<ul style="list-style-type: none"> <li>• New public transport line from Parramatta to Sydney Olympic Park/ Carter Street</li> <li>• Bus network review to support new line</li> <li>• Bus frequency / hours of operation improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Further gateway intersection upgrades required</li> <li>• Requires more assessment on a Homebush Bay subregion-wide and network level</li> </ul>

## Funding and apportionment

Strategic level cost estimates of the proposed transport-related infrastructure based on transport infrastructure costings undertaken for the Sydney Olympic Park Master Plan 2030 Infrastructure Contributions Plan (SOPA, 2008) are included in the detailed cost tables for road and intersection upgrade improvements in **Appendix D**.

## Events

Currently, the industrial uses of the Carter Street precinct area are compatible with the traffic operation of the events held at the neighbouring Sydney Olympic Park due to low weeknight and weekend activity.

When the precinct is developed, the residents and workers will need to be accommodated by the neighbouring event road closures and enforcement of on-street parking time limits. The Carter Street precinct can coexist with the major events held at Sydney Olympic Park, with minor changes to the existing traffic management plans.

As part of this project, it is recommended that the non-SOPA controlled roads over which SOPA has authority to prepare and implement traffic management (including closing or temporarily banning parking) under the SOPA Act (2001) be revised, such that streets that provide access to residences and businesses, such as Carter Street and Uhrig Road are removed, and new residential streets are not added.

However the site specific DCP, in acknowledging the rights of the Sydney Olympic Park Authority to exercise its statutory functions in relation to events held at Sydney Olympic Park, includes provisions for a public positive covenant. The covenant would relate to specified impacts in regard to noise and lighting, restriction on vehicle and pedestrian access, or security measures associated with events within Sydney Olympic Park.

## 3.5 Public spaces

---

The proposed transformation of the precinct from its industrial character into a predominantly residential one will generate a demand for a range of new quality public spaces to encourage and support new residential and employment uses, including parks, a village square and places for community gathering and events. The proposal includes the following key public spaces (see **Figure 19**):

- a substantial new park at Hill Road (1.8ha) providing a variety of experiences and recreational activities, stormwater detention functions and a green link to the Haslams Creek corridor
- a village park at Uhrig Road and Carter Street as the termination of Dawn Fraser Avenue axis, incorporating artworks, water elements and multi-purpose spaces for relaxation, markets etc
- a village square as a central meeting place on the Uhrig Road retail street
- public access along Haslams Creek, including the construction of the southern bank of the creek to the south of John Ian Wing Parade
- a central bio-swale corridor along the extension of John Ian Wing Parade to filter stormwater passing through the precinct.

All apartments will be located within 400m of public open space. The public open space network will:

- integrate with the broader Sydney Olympic Park / Newington open space network
- provide access to Haslams Creek
- provide for a diverse range of active and passive recreation uses.
- Detailed design will be guided by council and community input.

### Hill Road park

The 1.8ha Hill Road park will be the principal neighbourhood park within the precinct. Its role will be to provide:

- the community's primary recreation resource

- a variety of active and passive recreation settings with a range of memorable experiences for structured and unstructured activities
- the focus for the open space network within the precinct
- a link across Hill Road to the existing Haslams Creek foreshore open spaces
- a site for a multi-purpose community use building / facility which could incorporate public toilets and a kiosk, and
- a community based stormwater detention facility.

The park is strategically located at the low point of the site and on the proposed extension to John Ian Wing Parade which will provide access to the main residential precinct. It will be defined by the street system which curves from Hill Road to become parallel to Edwin Flack Avenue. Mid-rise apartment buildings will line the streets oriented to the park.



**Figure 19 Key public spaces**

The park edges will be framed by groves of trees and step or gently slope down to a simple “sunken” grass plane providing an amphitheatre effect. Water elements and stepped terraces will transition from higher levels along the southern street. Pedestrian desire lines to adjacent streets will create cross site patterns of movement.

The crescent footpath will be a wide, paved promenade defined by avenue trees with views over the park, and incorporate seats, bins and a bike path. An urban forest (eg Sydney Blue Gums) will form the backdrop for a BBQ/picnic shelter area.

### **Bio-swale corridor**

Water sensitive urban design principles have been adopted as a best practice technique given the precinct’s natural topography that presents an opportunity for leading edge water sensitive urban design. The proposed extension of John Ian Wing Parade will act as an overland flow path for stormwater flows from east to west.

The proposed new street and bio-swale within a 40m corridor (see **Figure 20**) that includes an off-road shared pedestrian and cycleway will form a spine to the residential development to the north of Carter Street. The swale will cleanse urban stormwater runoff prior to discharge into Haslams Creek and provide a distinctive wetland vegetation landscape and a biodiversity feature within the residential area.



**Figure 20 Bio-swale corridor – view south to village centre**

### **Haslams Creek edge**

It is also proposed to improve the existing Haslams Creek edge along the north western edge of the precinct which is currently in poor condition, by formalising the bank revetment to the same standard as elsewhere along the creek. A 20 metre wide landscaped public reserve is proposed to enable pedestrian and cycle movement between the creek and the precinct as indicated **Figures 21 and 22**.

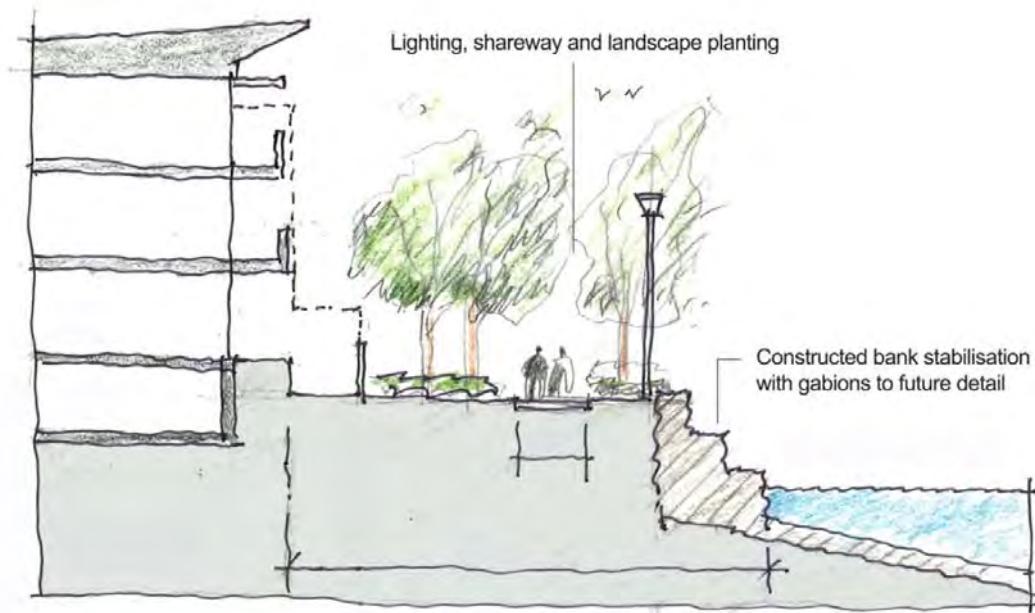


Figure 21 Proposed Haslams Creek edge treatment – section



Figure 22 Proposed Haslams Creek edge treatment

### **Uhrig Road local centre**

A local centre is proposed along Uhrig Road as a ‘main street’ with a village square, providing for daily shopping and services with walkable links to the surrounding neighbourhood. At about 150m in length it will connect Sydney Olympic Park at Edwin Flack Avenue with Carter Street.

Flexible active frontages at ground floor level will allow mixed use development including retail, office, workspace or community uses to respond to market demand over time. The south side will receive northern sun suitable for outdoor dining and activity associated with retail and commercial frontages. Commercial offices or residential uses are suitable above ground floor retail.

A small village square (generally of a scale 30m x 30m, minimum 600sqm) will provide a focus for retail, entertainment and social activity, a place for gathering, events or relaxation. Small supermarkets / mini marts could be located on either side of the street.



**Figure 23 Local centre and village square at Uhrig Road**

### Streetscapes

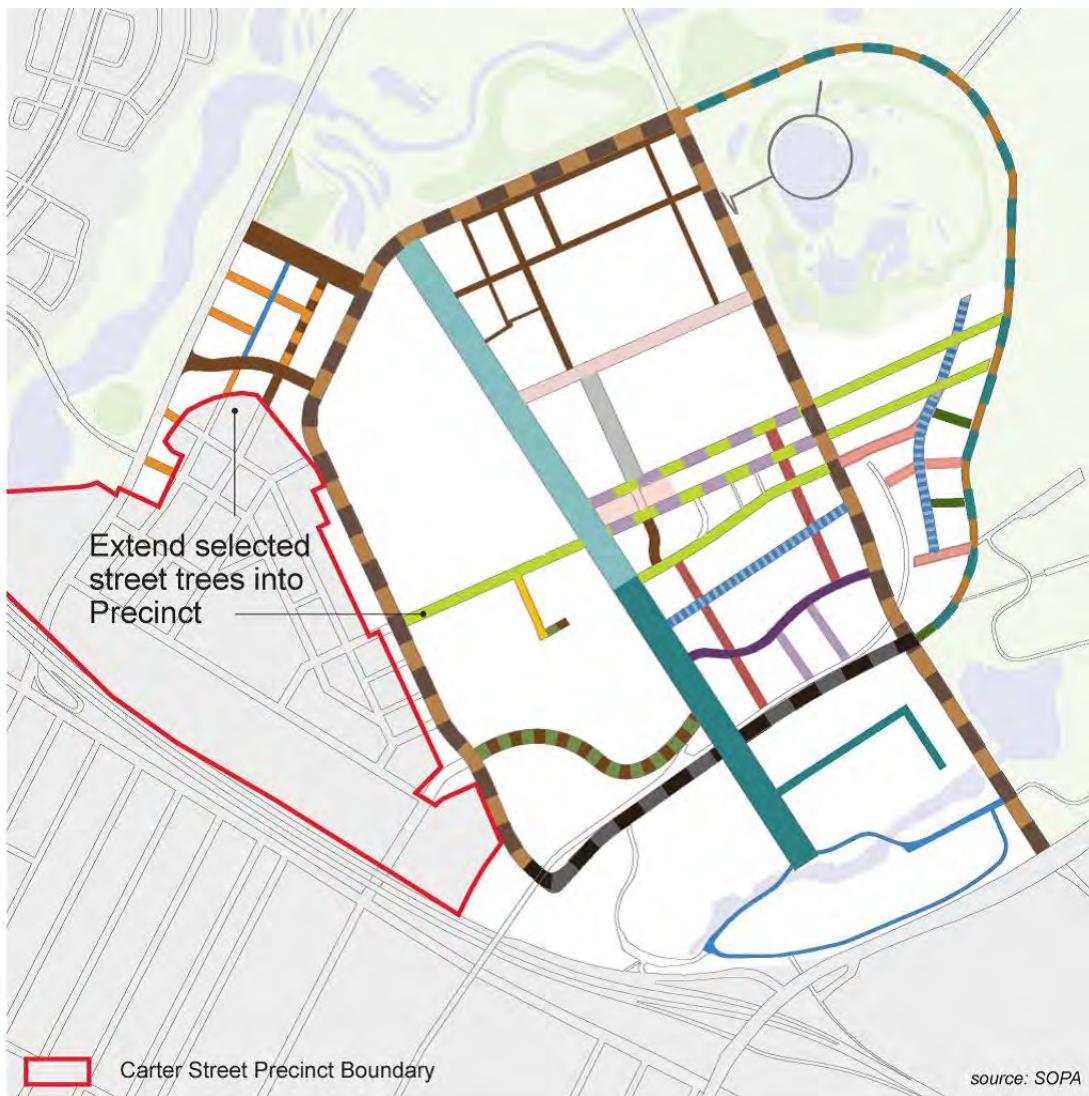
The design, management and maintenance of streets and other spaces between buildings is important as it has a significant influence on the final character of the precinct.

The proposed development of street landscaping in the precinct will seek to continue tree species in the SOPA Street Tree Master Plan shown in **Figure 24**. The master plan identifies tree species for Dawn Fraser Avenue, Birnie Avenue and for local streets abutting the precinct. Street trees in Carter Street will be selected with regard to these species and evidence of suitability.

Complementing the proposed public spaces, existing street trees will be protected where possible, and new landscape setbacks for deep soil planting on major streets created as follows to either retain existing street trees or allow for new planting:

- 10m setback from Hill Road and the north side of Carter Street
- 20m setback from Birnie Avenue.

New streets are to be designed to meet relevant Auburn Council requirements as they are to be handed over to Council to own and manage. Developers will also be required to prepare a public art strategy that will provide appropriate public artwork in prominent locations in the public domain.



Street Tree Key											
Ficus Hillii	Corymbia maculata	Eucalyptus pilularis	Pyrus calleryana								
Araucaria cunninghamiana	Eucalyptus saligna	Eucalyptus punctata	Brachyciton x roseus								
Lophostemon confertus	Fraxinus oxycarpa	Melaleuca quinquenervia									
Lophostemon confertus	Elaeocarpus eumundii	Melaleuca decora									
Pyrus calleryana	Acmena smithii	Melaleuca stypeliaoides									
Corymbia maculata	Melaleuca leucadendra	Melaleuca leucadendra									
Eucalyptus microcorys	Eucalyptus sideroxylon										
Eucalyptus citriodora	Corymbia maculata										
Eucalyptus sideroxylon	Eucalyptus microcorys										
	Phoenix canariensis	Eucalyptus punctata									
	Celtis australis	Eucalyptus citriodora									
	Platanus X acerifolia										

Figure 24 Sydney Olympic Park Tree Master Plan

## 3.6 Community uses

Currently there is no residential population in the Carter Street precinct. The projected population is approximately 11,550 based on 2.1 people per 5,500 dwelling units. In addition to future residents there will be additional jobs through the expansion of business uses. The projected population within the precinct will need community facilities and spaces.

### Community facility

Based on an assessment of Auburn Council's 2007 Community Facility Needs Assessment and Development Study (see **Appendix F**) and a total population of 11,550 there is a requirement for a 578sqm community centre. **Figure 12** indicates a preferred location for community facilities. The proposed community facility

should be designed to enhance and integrate with the community to ensure informal and spontaneous access to community information and programs.

In addition to the local facility the community will need access to district level facilities such as a library. The proposed library at Wentworth Point, which will be accessible by bus services that connect Carter Street to Wentworth Point, may be able to fulfil this need over time.

### **Primary school**

Based on discussions with the Department of Education and Communities, a new primary school will eventually be required within the precinct. The timing and delivery of the proposed primary school will be dependent on new dwelling occupation and take up rates, development staging, capacity of existing schools, budget availability and priority against other school projects. An exact location of the school site is yet to be determined. Ultimately it will provide a communal focus and anchor for the development of further community services.

### **Child care**

Based on Growth Centre Commission standards, some 5.8% of children 0-4 years would be present in the projected population suggesting 670 children requiring 130 child care places, being 1 space for every 5 children. Consequently, there would be a need for two child care centres to serve the needs of the new community, using an average 65 place centres. With the Carter Street precinct accommodating additional jobs in the future, further support for child care needs for workers may also need to be considered.



**Figure 25 Preferred location for community facilities at new village park**

## **3.7 Proposed planning controls**

To enable development to take place, amendments are required to Auburn Local Environmental Plan 2010. Site specific development controls that will form part of the Auburn Development Control Plan 2010 are also proposed. The statement of intended effect of the proposed changes is at **Appendix A**.

Amendments to the Auburn LEP include a revised zoning, FSR and height schedule for the precinct. The amendment will be facilitated through a State Environmental Planning Policy (SEPP) under section 37 of the Act, as the proposal is considered to be of regional significance.

The site specific DCP (refer **Appendix B**) includes the vision, principles, indicative structure plan and objectives and controls for the public domain and built form. The new DCP will form part of the existing Auburn DCP 2010. It will replace existing DCPs that apply to this area.

The DCP will function as a performance based planning instrument to guide development and facilitate merit-based assessment. In this role, the DCP promotes both certainty and flexibility. The indicative structure plan demonstrates one way in which the precinct can develop to achieve these key elements. The DCP specifies that the consent authority is to be flexible in applying the controls, including allowing alternative solutions that achieve the key elements.

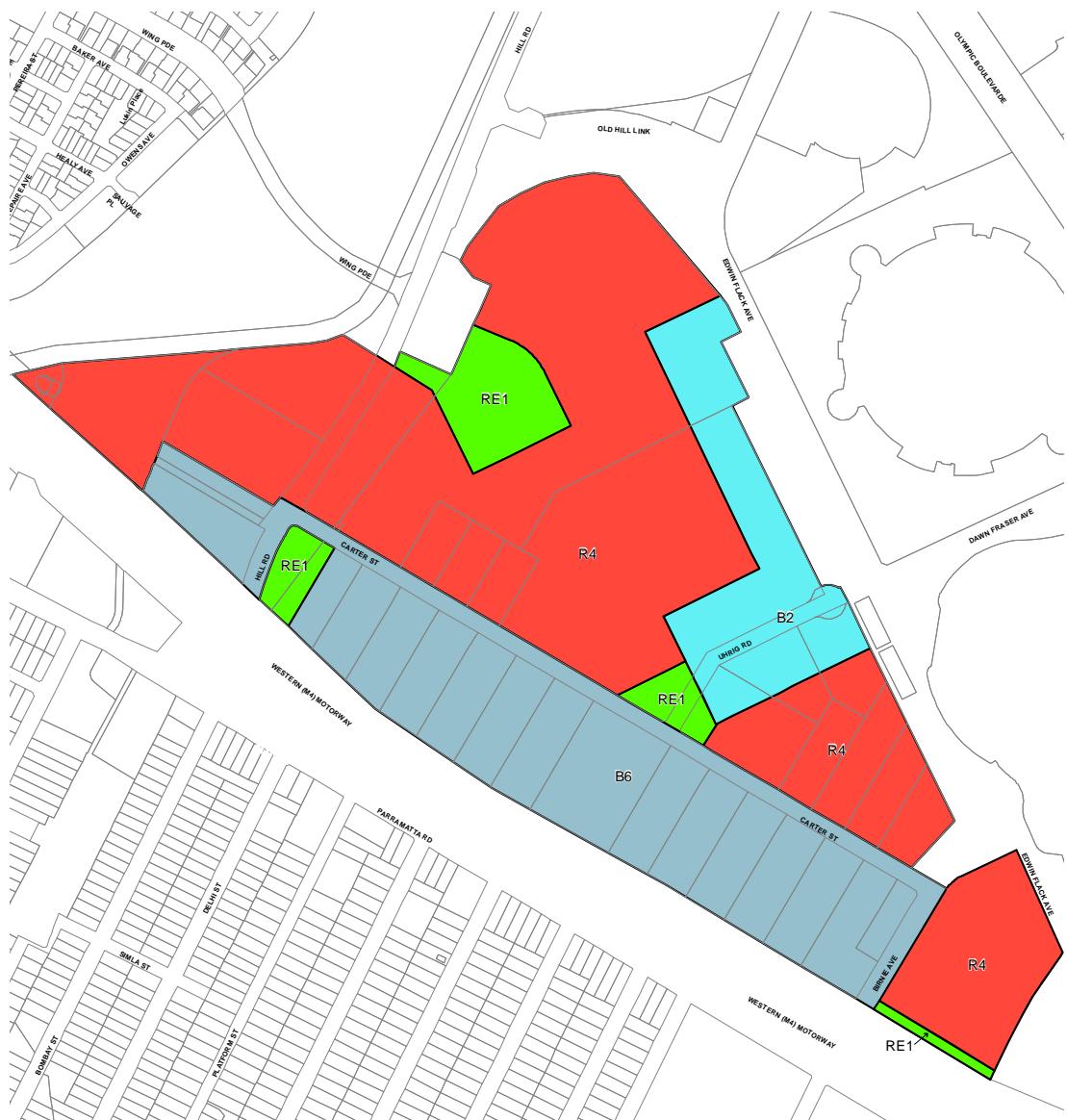
**Appendix C** provides an assessment of the consistency of the proposal for the Carter Street Urban Activation Precinct with the aims and objectives of the relevant planning policies and strategies.

### Proposed zoning

The proposed zoning illustrated in **Figure 26** reflects the land use and urban structure plan by providing appropriate zones to deliver a diverse range of housing and employment areas supported by a local centre and recreation areas adjacent to residential areas. **Table 3** below indicates the key permissible uses consistent with Auburn LEP 2010. A range of other uses is also permissible with consent.

**Table 3 Key permissible uses within proposed zones**

Zones	Permissible uses
<b>R4 High Density Residential</b> for new housing in a range of densities and heights	Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Shop top housing
<b>B2 Local Centre</b> for a range of compatible uses located in close proximity to Sydney Olympic Park and the train station	Boarding houses; Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Group homes; Information and education facilities; Medical centres; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Residential flat buildings; Respite day care centres; Restricted premises; Roads; Self-storage units; Service stations; Serviced apartments; Shop top housing; Tourist and visitor accommodation; Warehouse or distribution centres.
<b>B6 Enterprise Corridor</b> for employment uses including business, office, retail and light industrial	Building identification signs; Business identification signs; Business premises; Bulky goods premises; Community facilities; Food and drink premises; Garden centres; Hardware and building supplies; Hotel or motel accommodation; Kiosks; Landscaping material supplies; Light industries; Markets; Neighbourhood shops; Passenger transport facilities; Plant nurseries; Roads; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres
<b>RE1 Public Recreation</b> for public open spaces, parks and reserves	Child care centres; Community facilities; Depots; Environmental facilities; Environmental protection works; Function centres; Information and education facilities; Kiosks; Markets; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Roads; Water recreation structures



- B2 Local Centre
- B6 Enterprise Corridor
- R4 High Density Residential
- RE1 Public Recreation

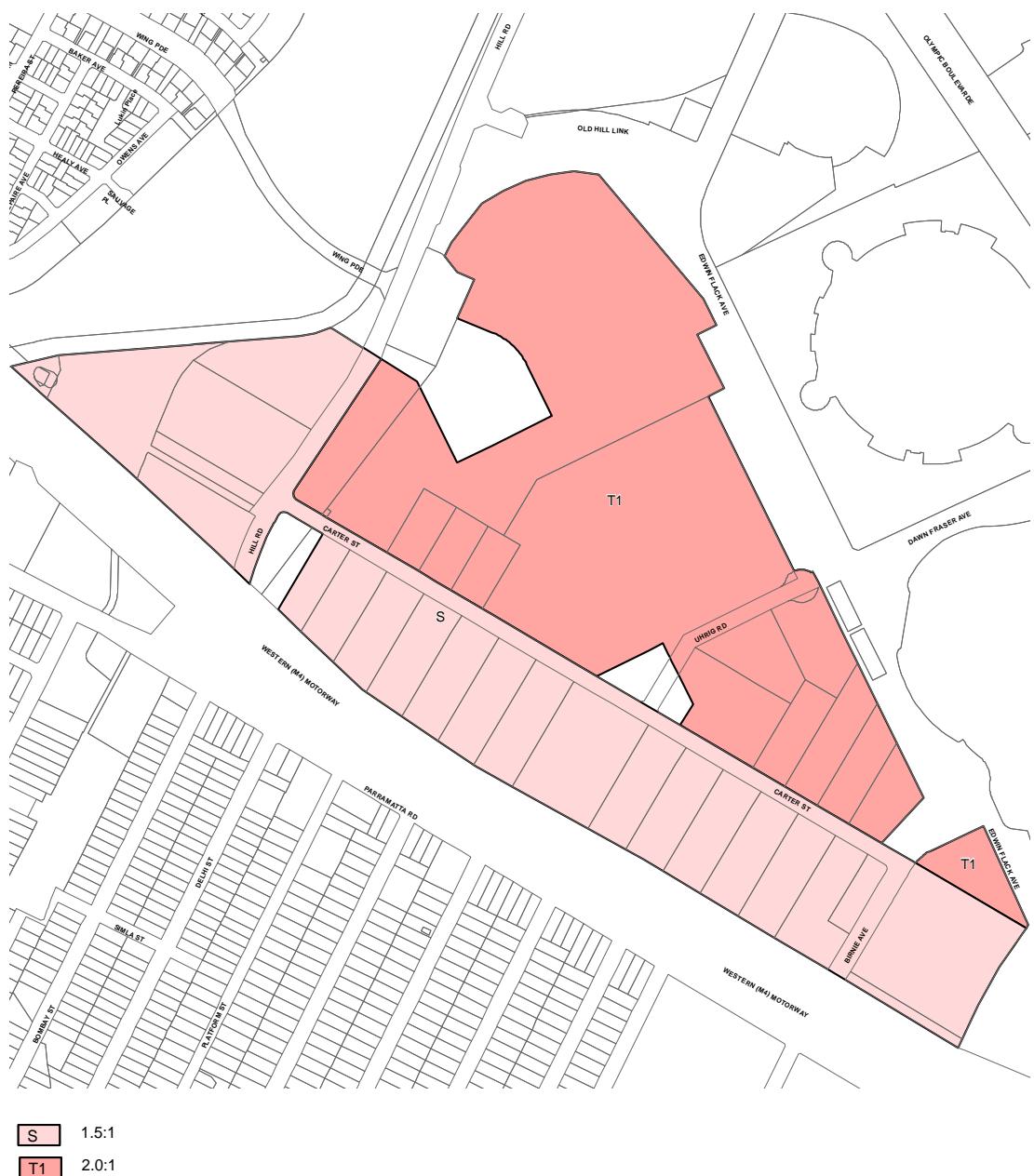
**Figure 26 Proposed zoning plan**

### Proposed floor space ratio

The proposed range of floor space ratios shown in **Figure 27** has been identified to encourage regeneration and investment in the precinct. A floor space ratio (FSR) from 1:5:1 to 2:1 is proposed for the residential and local centre uses with lower densities located closer to Haslams Creek.

For employment uses along the motorway a maximum of 1.5:1 is proposed.

The proposed FSR represents a balance between a high quality built form, the capacity of infrastructure, particularly roads, and financially viable development.



**Figure 27** Proposed floor space ratio plan

### Proposed building heights

Building form and scale contribute to the physical definition of the street network and the hierarchy of public spaces. The proposal includes a range building heights across the precinct to encourage variety, diversity and different architectural styles.

Higher density development will be located at prominent street corners and nodal points to reinforce the visual context by concentrating building height and built form as shown on **Figure 28**.

The principles of building height are:

- low rise buildings of up to 4-6 storeys fronting east-west streets to reinforce the pedestrian scale of these lower order local streets and to achieve good levels of solar access
- medium rise buildings of 7-8 storeys where taller elements are counter balanced with lower buildings of 4-6 storeys
- building height decreasing toward the Haslams Creek foreshore

- medium rise buildings along the motorway edge and at the interface with Sydney Olympic Park to act as noise buffers for residential development within the precinct
- high rise buildings up to 20 storeys reinforcing gateways, key streets and open spaces.

The proposed heights reflect the proposed street layout, identified in **Figure 16**. The heights on the north side of Carter Street will need to be refined in the next stage of the process to demonstrate achievement of the overall proposed FSR across that part of the precinct. This is addressed in the site specific DCP and anticipated either as an amendment to the DCP or as a stage 1 development application which would identify the detailed distribution of FSR related to height.



**Figure 28 Proposed building heights plan**

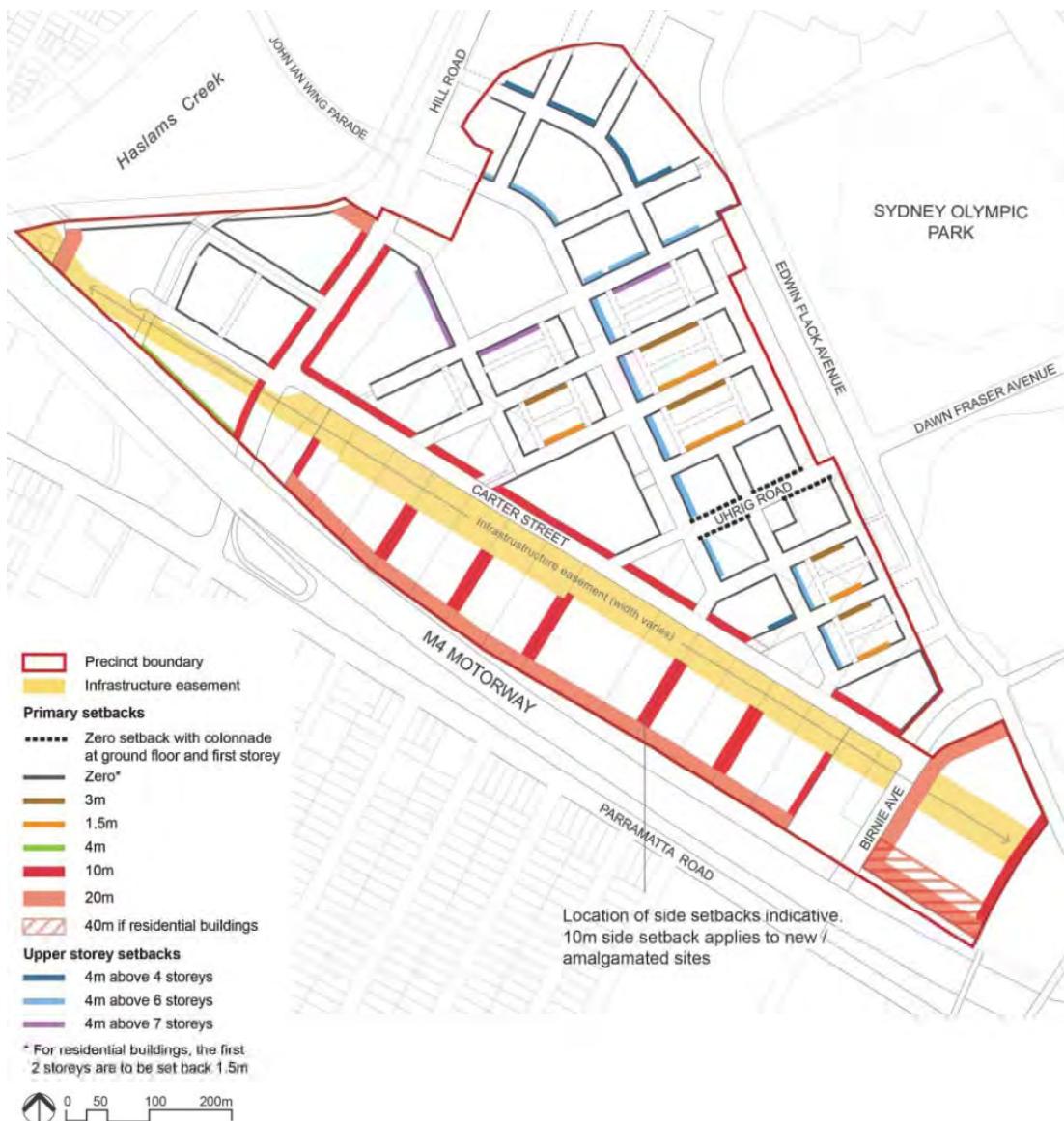
## Proposed setbacks

Building setbacks work together with the proposed street layout (refer **Figure 16**) and building heights (refer **Figure 28**) to define the physical form of the built environment. Once the street pattern is established and appropriate building heights identified and tested, the separation distances or setbacks determine the quality of the precinct.

For the Carter Street precinct the proposed setbacks vary in response to specific site conditions and are designed to create a responsive edge between buildings and public spaces. High quality interfaces between buildings and public spaces, including streets and parks, will be required in response to particular conditions appropriate to a vibrant urban community. Primary and upper storey setbacks are identified in **Figure 29**.

The key proposed minimum building setbacks are:

- 10m from Hill Road and Carter Street
- 20m from the M4 Motorway and the east side of Birnie Avenue
- 1.5m at ground level for north side buildings to John Ian Wing Parade extension
- 4m at top floor for north edge buildings and those facing Hill Road park.



**Figure 29** Proposed setbacks

## Car parking rates

Car parking in all new development is to be underground, under-croft or semi basement located generally within the building footprint of the building above. Where above ground parking cannot be avoided due to site conditions, it will need to be well integrated into the overall façade design and the public domain.

The car parking rates set out in **Table 4** are proposed to promote the use of non-car modes where possible. Commercial rates have the greatest impact on traffic generation. The residential parking rates are based on Auburn Council DCP 2010 while the commercial and retail rates are based on the Sydney Olympic Park Master Plan 2030.

**Table 4 Car parking rates**

Land Use types	Type	Maximum
<b>Residential</b>	Studio	0.5 space per dwelling
	1 bedroom	1.0 space per dwelling
	2 bedroom	1.0 spaces per dwelling
	3 bedroom	2.0 spaces per dwelling
	4 bedroom	2.0 spaces per dwelling
	Visitors	0.20 spaces per dwelling
<b>Commercial</b>	All	1 space / 80sqm GLFA
<b>Retail</b>	Supermarket	1 space / 25sqm GLFA
	Local retail	1 space / 50sqm GLFA

There is also opportunity to introduce car share schemes to help manage parking demand. Such schemes can provide residents the 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-term trips occasionally. To ensure the success of such schemes it is important that they be implemented in tandem with public transport improvements.

# 4 Consultation

## **The process**

Consultation with key stakeholders, including relevant government agencies and landowners has been undertaken during the preparation of this proposal. Community information sessions are held during the exhibition period.

Key consultation mechanisms to support this process are:

- **Steering Group**, comprising representatives of Auburn Council
- **Agency Working Group**, bringing together input from Auburn Council officers, Transport for NSW, Sydney Olympic Park Authority, the Department of Education and Communities, and Urban Growth NSW.
- **Landowners' forum**.

The Steering Group, Agency Working Group and the Landowners' Forum have met a number of times through the development of this proposal.

## **Steering Group and Agency Working Group**

The key issues and concerns raised by the Steering Group and Agency Working Group are outlined below.

### **Traffic and transport**

- traffic demand management critical in promoting sustainable public transport, walking and cycling in alignment with the Sydney Olympic Park Authority which has set a 40% target for public transport use
- further improvements required to bus and train frequencies assisted by dedicated public transport priority to reduce car driver mode share
- reduce parking rates to encourage the use of alternative modes of transport provision
- need to promote public transport through the provision of transport connections as well as cycling, parking and direct pedestrian links in the precinct
- concern regarding traffic conditions in the subregion during weekday peak periods and at the three intersections within the precinct and at Parramatta Road/Birnie Avenue and Parramatta Road/Hill Road

### **Community and recreational facilities**

- concern regarding unmet demand for pre-school child care places and a need for further provision of child care facilities
- concern about capacity issues with primary schools in the area as well as high schools to cater for the growing population
- contributions to fund community and recreational infrastructure
- need to capitalise and integrate with the recreational facilities in the adjacent Sydney Olympic Park

### **Noise**

- need to provide noise mitigation by siting, orienting and treating residential buildings by means of acoustic glazing

- need to provide a noise buffer for future residents by developing business development up to 6 storeys adjacent to the M4 Motorway

### **Landowners' forum**

The key issues and concerns raised by the landholders are outlined below.

- ensure commercial and residential development interfaces are handled sensitively
- ensure integration with commercial offerings at Sydney Olympic Park
- where possible provide parking for commercial vehicles on site to minimise parking issues
- support from landowners for further improvements to local intersections serving the precinct
- support for retail and community facilities to serve the needs of both employees and future residents
- support for public transport such as improved bus and train frequencies to support sustainable travel
- support for pedestrian and cycle links to be extended to public transport facilities
- local and subregional road network access and congestion issues timing, funding and possible impacts of the WestConnex proposals

### **Consultation next steps**

Engagement to date has been targeted. Community information sessions will be held during the public exhibition period. These sessions will be held at a convenient, central location close to the Carter Street precinct. The wider local community and interested stakeholders will be able to attend sessions to learn more about the project, ask questions and provide feedback to the project team.

During the exhibition period, formal public submissions on the proposal are invited. When submissions are received, the Director General of the NSW Department of Planning & Infrastructure will consider all issues and where relevant, modify the proposal to minimise impacts on the environment and ensure consistency with state and regional planning objectives.

# 5 Key considerations

## 5.1 Noise

The precinct is located in a high noise environment, potentially affected by traffic noise from major arterial roads and noise from major events at Sydney Olympic Park. The existing industrial uses within the precinct also generate noise, with some warehousing facilities having 24 hour operations involving heavy vehicles. It is likely that these industrial uses will continue to impact on future development within the precinct, given that development will be staged, and in particular that development on the south side of Carter Street is expected to occur over the medium to long term.

A noise impact assessment has been undertaken to support the proposal (see **Appendix H**). The assessment considered the impacts of noise from Sydney Olympic Park including concerts and sporting events and traffic noise from the M4 Motorway, Parramatta Road, Hill Road and Birnie Avenue.

The noise assessment used the following guidelines and planning instruments that give instruction on acceptable noise levels within residences potentially affected by major external noise sources:

- Sydney Olympic Park Master Plan 2030
- State Environmental Planning Policy (Infrastructure) 2007
- Australian Standard AS2107: 2000 Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors.

Based on the review, the noise assessment suggests appropriate internal noise criteria for residential development within the precinct which are shown at **Table 5**. Recommended and maximum criteria have been established in recognition of the fact that the precinct is located adjacent to a major entertainment precinct and existing noise sources.

**Table 5** Noise criteria

Internal Space	Recommended Noise Criteria	Maximum noise criteria
Living areas and Working areas	40 dBA	45 dBA
Sleeping areas	35 dBA	40 dBA

The noise assessment predicted noise levels from traffic and Sydney Olympic Park events, and prepared a feasibility assessment to test whether the recommended noise criteria could be achieved through typical glazing treatments. The assessment concluded that all buildings could achieve the recommended criteria, with some buildings requiring double glazing or acoustically treated façade designs such as enclosed balconies.

The Draft Carter Street DCP establishes development controls to ensure that noise impacts are managed, and includes the following requirements for all for all residential and mixed use development:

- site planning, building orientation, and interior layout is to lessen noise intrusion as far as possible
- development applications are to demonstrate how buildings can comply with the noise criteria outlined in **Table 5**.

## 5.2 Odour

---

The existing Homebush Bay Liquid Waste Treatment Plant (LWTP) and the Auburn Resource Recovery Centre are located north of the Carter Street precinct within the Sydney Olympic Park precinct. The Homebush Bay facility is operated by Transpacific Industries Pty Ltd.

An odour assessment (see **Appendix I**) examined the existing and proposed odorous impacts associated with the Homebush Bay facility on the proposed Carter Street precinct. Local land use, terrain and meteorology were considered in the assessment and dispersion modelling.

Four scenarios were modelled to capture the different operational scenarios at the facility. The odour levels at the private receptors are predicted to comply with the NSW Environmental Protection Authority assessment criterion of 2 odour units (2 ou) when the odour control furnace is operating under normal conditions.

It is therefore possible, with appropriate planning, to develop the Carter Street precinct progressively from the south east, thereby mitigating the potential for adverse odour impacts, predicted to occur in the north western area until the end of the useful life of the LWTP.

In the longer term, relocation of the Homebush Bay facility will be examined. This will require a whole of Government approach as this is a major facility serving the Sydney Metropolitan area as well as NSW.

The Sydney Olympic Park Authority proposes that in the longer term both the LWTP and the Auburn Resource Recovery Centre should be relocated to enable staged residential development of the Haslams precinct consistent with the Sydney Olympic Park Master Plan 2030. These facilities present potential land use conflicts and constraints to redevelopment of the Haslams precinct. The proposed staging of residential development in the Carter Street precinct has taken into consideration the relocation of these facilities.

## 5.3 Contamination

---

The Homebush Bay area formed part of the traditional lands of the Wannagal Clan when Europeans arrived and free settlers established farms along Parramatta Road. Thomas Laycock received an early land grant and named his farm Home Bush. In 1808 this was sold to D'arcy Wentworth and subsequently bequeathed to W C Wentworth who oversaw the development of the Australian Jockey Club on the land. The land was unsuccessfully subdivided in the 1880s and was resumed for the State Abattoirs in 1907. The abattoirs and its extensive stockyards operated through to the late 1980s but were progressively sold off for industrial uses from the 1960s, including land in the Carter Street precinct.

Being a strategically located, large government land holding, the abattoirs became the major site for Sydney 2000 Olympic Games bid while the Carter Street precinct was established as an industrial area.

A desktop review of the site's history and site inspections (see **Appendix G**) indicate that there are a number of potential contaminants from prior uses and land reclamation and contaminants associated with imported fill, railway land, waste dumping, petroleum based products and the meat industry.

Preliminary contamination investigations have been carried out for both the north and south sides of Carter Street. The study for the north side of Carter Street ascertained that with appropriate remediation strategies the area is suitable for multi-level residential development with basement car parking.

The study for the south side of Carter Street including both sides of Hill Road and Birnie Avenue concluded that further detailed site investigations are required to clarify the presence of any contaminants of potential concern associated with current and historic activities for certain properties. It should be noted the extent of any detailed site investigations will vary dependent on the proposed land use.

Future development applications need to be in accordance with relevant Environmental Protection Authority remediation regulations set out in State Environmental Planning Policy No 55 (SEPP 55) Remediation of Land and the Managing Lands Contamination Guidelines 1998.

## 5.4 Economic impacts

---

The department's *NSW in the future: Preliminary 2013 Population Projection* forecast that the population of Sydney will grow by approximately 1.5 million by 2031. The local government area of Auburn which incorporates the Carter Street precinct, Wentworth Point and Sydney Olympic Park is a rapidly developing area that is projected to grow by 43,400 people being a 55.4% increase from 2011-2031 to 121,700 people.

The key demographic drivers for population growth set out in the Preliminary Population Projections identified the main reasons for growth in Auburn to 2031 as high fertility rates, internal migration interstate and within NSW, and positive net overseas migration, all of which will create a significant demand for a wide range of housing in the Auburn local government area.

The Carter Street precinct presents an opportunity to address these housing demands by delivering a significant amount of new housing and employment in a location that is adjacent to Sydney Olympic Park with its mix of commercial, sporting, entertainment and cultural facilities. There is strong underlying demand for housing within the Auburn LGA and the wider West Central region that is a major destination for new migrant population along with domestic demand for a mix of housing types.

The precinct is an established light industrial area with the majority of buildings providing large warehouse facilities offering logistics services. According to economic feasibility advice (see **Appendix E**), maintaining or intensifying these uses is not recommended as it would not capitalise upon the unique location of the Carter Street precinct adjoining the significant cultural, sporting and social infrastructure of Sydney Olympic Park. A general shift westward within the Sydney industrial landscape, supported by planning infrastructure and evidenced by research data, indicates a preference (particularly within the rapidly growing freight and logistics industry) for alternative decentralised industrial nodes in the outer west over the established inner west industrial precincts.

There are however, opportunities for development of commercial office uses, delivering greater employment densities and better capitalising on the higher skilled labour market in inner western Sydney. There is also potential to offer a quality business park solution in line with occupier demand for clustered precincts.

The increased local workforce including residents within the precinct and surrounding areas will drive employment growth in business hubs with local services such as real estate, solicitor and community uses as part of mixed use development allied to the village centre. The staged development of retail will complement other uses as part of the wider mixed use scheme and support the phased growth of population and employment. New retail will link in and complement the aspirations identified in Sydney Olympic Park Master Plan 2030 to progressively develop a hub adjoining Olympic Park Train Station with commercial offices and retail uses.

## 5.5 Overshadowing

---

Potential overshadowing impacts of the indicative built form of the proposal have been assessed for mid-winter (21 June) and the autumn equinox (21 March) at 9.00am, 12noon and 3.00pm as shown in **Figures 30 to 35**.

Concentrating building height at prominent street corners and nodal points that reinforce the visual context and placing parks and squares to the east and south of streets can ensure that public open spaces can achieve good solar access.

The analysis of the proposed built form indicates that the public park adjacent to Hill Road will not be in shadow from late morning in mid-winter nor at the equinox, while the Haslams Creek waterfront will not be in shadow at all. The main residential streets and pocket parks will have good solar access during the middle of the day.

Surrounding developments adjacent to the precinct south of Parramatta Road will also be completely free of overshadowing.



**Figure 30** Shadows at 9:00am on the winter solstice (21 June)



**Figure 31** Shadows at 12 noon on the winter solstice (21 June)



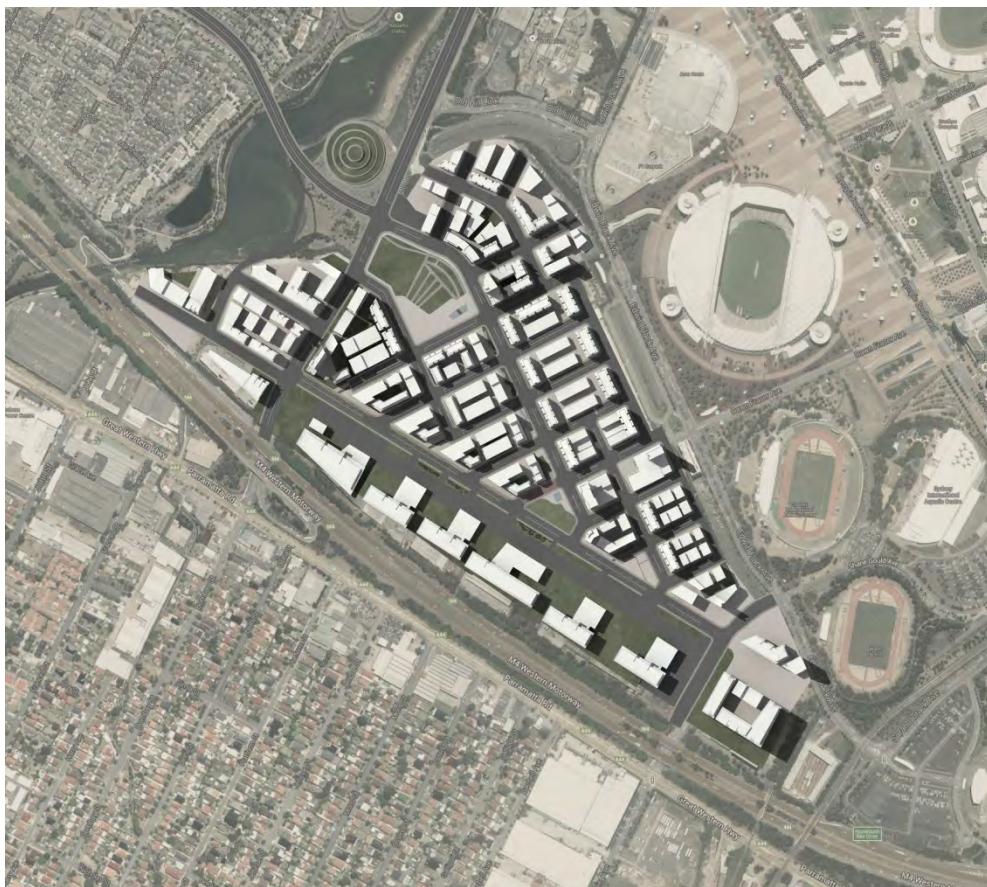
**Figure 32** Shadows at 3:00 pm on the winter solstice (21 June)



**Figure 33** Shadows at 9:00am on the autumn equinox (21 March)



**Figure 34** Shadows at 12 noon on the autumn equinox (21 March)



**Figure 35** Shadows at 3:00 pm on the autumn equinox (21 March)

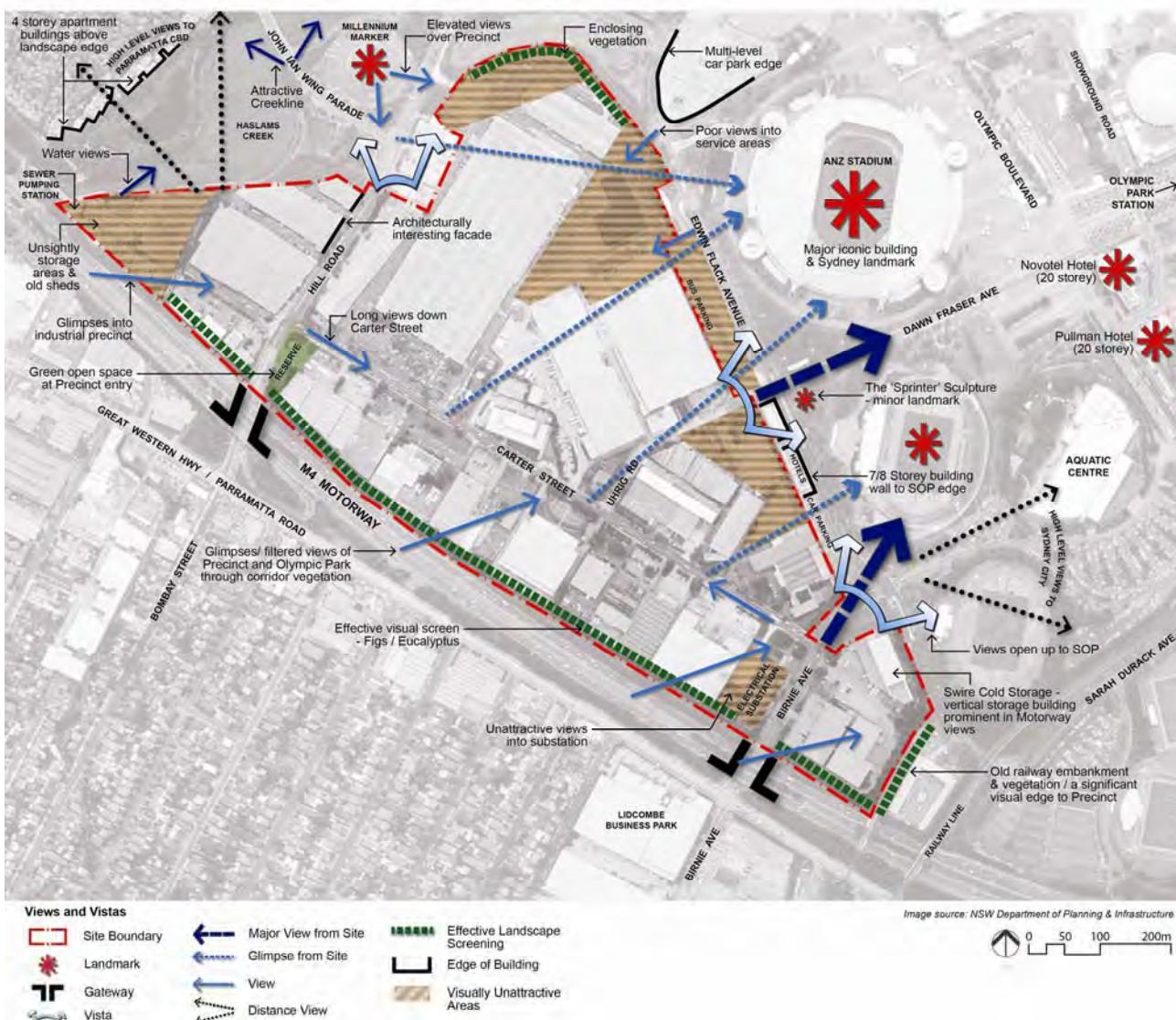
The site specific DCP requires that individual residential and mixed use buildings be designed in accordance with the solar access provisions of the Residential Flat Design Code, which seeks acceptable levels of solar access to dwellings and their private open space.

## 5.6 Views and visual impact

The protection of existing key views to the iconic buildings in Sydney Olympic Park and the creation of new views from the proposed new pathway along Haslams Creek have influenced the proposed urban form of the precinct.

### Views

There are contained vistas within streets leading to more expansive views of Sydney Olympic Park buildings as Edwin Flack Avenue is approached from Uhrig Road that will be retained. Glimpses of the landmark buildings of Sydney Olympic Park between buildings and along streets will remain when moving through the precinct. These views that provide points of orientation and reinforce the closeness of Sydney Olympic Park to the precinct, have been used to establish the orientation of new internal residential streets with the resulting alignment of buildings preserving view corridors to iconic Sydney Olympic Park buildings. There are also long views available to the skylines of Parramatta CBD from Haslams Creek and long views of Sydney CBD available from the northern edge of the precinct at Birnie Avenue as noted on **Figure 36**.



**Figure 36** Views and vistas

## **Visual impact**

The precinct is clearly delineated with strong edges and boundaries including:

- the elevated M4 Motorway and Parramatta Road to the south west
- Haslams Creek to the north west
- Edwin Flack Avenue and Sydney Olympic Park to the north east.

The visual impact of office and apartment buildings in the Carter Street precinct from Lidcombe to the south of the precinct will be minimised by the elevated M4 motorway that is screened by landscaping and vegetation to the rear of existing and new light industrial and office buildings. The main precinct entries from Parramatta Road are via M4 Motorway underpasses and established gateway portals to Homebush Bay, Wentworth Point and Sydney Olympic Park.

The northern eastern edge of the precinct is defined by the long edge of Sydney Olympic Park and Edwin Flack Avenue. 6-8 storey mixed use buildings that will form a strong visual edge for the residential areas in the precinct and serve as a barrier, are proposed along this boundary.

The western edge of the precinct is also screened by vegetation and landscaping around Haslams Creek, while Newington is screened by mature tree planting. The old railway embankment and vegetation to the south form a strong visual edge minimising visual impacts.

## **Sydney Olympic Park energy and lighting policy**

The Sydney Olympic Park Authority seeks to minimise light pollution by limiting the use of lights at inappropriate times, locations, and intensities. A computerised operating system maximises energy efficiency within the public domain by controlling public area lighting, artwork lighting and water feature operation. This system gives flexibility in operating lighting, enabling control of times and lighting levels to suit the level of public activity in a particular place, on a particular night, at a particular time. These systems are designed to reduce light spill and to minimise night glow that would otherwise affect Carter Street precinct's future residents. The Sydney Olympic Park Environmental Guidelines 2008 and the State of the Environment Report 2012 provide further details of how buildings and facilities are designed to maximise the use of renewable energy, and minimise energy consumption and greenhouse gas emissions.

## **5.7 Sustainability**

---

The 2000 Sydney Olympic Games transformed land at Homebush from degraded landscapes into world class environmentally responsible venues, facilities and urban parklands, winning many prestigious international and national environmental awards.

The high standards of sustainability subsequently set for new residential and commercial development within Sydney Olympic Park will be emulated in the Carter Street precinct.

The extension of Sydney Olympic Park's recycled water system (Water Reclamations and Management Scheme), which currently serves Sydney Olympic Park and Newington, will be examined as a major ecologically sustainable development initiative for the Carter Street precinct.

Urban stormwater will be required to be collected, detained and cleaned within a system of bio-swale streets draining to Hill Road park and hence to Haslams Creek to protect downstream waterways.

To ensure a high standard of residential amenity and sustainable design practice, the SEPP 65 Residential Flat Design Code principles will be applied to all residential and mixed use developments.

Building design will be encouraged to express a strong commitment to ecologically sustainable development (ESD) principles, including passive solar design, optimal orientation, effective sun shading, cross ventilation and open plan living.

## 6 Infrastructure summary

**Table 6** provides a summary of the infrastructure items which are required support the proposed development of the precinct, including local and regional traffic improvements, public transport improvements and community infrastructure. This has been informed by the transport impact assessment (**Appendix D**) and the community facilities study (**Appendix F**) prepared to support the proposal.

The 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 6 Infrastructure summary**

Item	Measure	Who	Comment
<b>Local traffic improvement</b>			
1.	Access intersection improvements: <ul style="list-style-type: none"><li>• Hill Road and Carter Street: signalisation, upgrade</li><li>• Hill Road and John Ian Wing Parade: modification of existing signals and upgrade</li><li>• Edwin Flack Avenue, Dawn Fraser Avenue and Uhrig Road: signalisation</li><li>• Birnie Avenue and Carter Street: signalisation upgrade</li></ul>	Developer	These upgrades are proposed to address cumulative impact of development in Carter Street precinct
2.	Internal intersection improvements: <ul style="list-style-type: none"><li>• Carter Street and Uhrig Road: signalisation &amp; upgrade to assist movement of pedestrians &amp; buses</li><li>• John Ian Wing Parade extension to Uhrig Road</li></ul>	Developer	These upgrades would occur concurrent with development in the immediate vicinity
3.	On-street parking management strategy	Council	To control on street parking as required
4.	Car share scheme	Developer	To encourage reduction in car ownership
5.	Bus stop infrastructure	Developer	To improve frequency of bus stop shelters and amenities
6.	Cycle links and public bike parking	Developer	To improve local cycle links and facilities

Item	Measure	Who	Comment
7.	Pedestrian network improvements including pedestrian signals on M4 east bound on ramp, mid-block crossings of Carter Street and footpaths	Developer	To improve pedestrian amenity and safety
8.	Resident transport information packs	Developer	To provide information about travel choices to new residents
9.	Workplace travel plans	Developer	To provide information about travel choices to new workers
10.	Wayfinding and directional signage	Developer	To provide information to residents, workers and drivers
<b>Regional traffic improvement</b>			
11.	Investigate subregional arterial road network capacity through wider area traffic modelling, informed by proposals identified in WestConnex project such as a new east bound ramp onto the M4 motorway from Hill Road	TfNSW	WestConnex includes widening M4 Western Motorway to 4 lanes in each direction for 7.5km between Church Street and Homebush Bay Drive
12.	Investigate design solutions to provide vehicle, pedestrian and cycle access to Carter Street UAP to accommodate WestConnex project	TfNSW/ Developer	Details of impact of WestConnex project on design yet to be established
13.	Investigate intersection improvements when funding available: <ul style="list-style-type: none"> <li>• Parramatta Road, Hill Road and Bombay Street</li> <li>• Parramatta Road and Birnie Avenue</li> <li>• Hill Road and Old Hill Link</li> <li>• Edwin Flack Avenue and Birnie Avenue</li> </ul>	TfNSW/ Developer	These upgrades would address cumulative impacts of sub regional road traffic accessing entire Sydney Olympic Park area
<b>Public transport improvements</b>			
14.	Further feasibility studies into Sydney Olympic Park Line of proposed Western Sydney Light Rail Network incorporating a link into Carter Street	TfNSW/ Parramatta Council	Light rail to Parramatta CBD offers another alternative transport connection to Parramatta CBD
15.	Review and improve bus service coverage and frequency	TfNSW	Bus system frequency to be expanded in stages to meet future demands
16.	Cycle connection along Carter Street in parallel to M4 Motorway	Developer	To improve sub regional cycle links
17.	Investigate options to run more direct train services to Olympic Park Train Station	TfNSW	To improve frequency of service and convenience of travel

Item	Measure	Who	Comment
<b>Community infrastructure</b>			
18.	Community centre	Developer	Facility of some 565sqm required to serve needs of precinct; subject to discussions with Council
19.	Child care centre	Developer	Projected need for two child care centres staged to meet future growth
20.	Primary school	Department of Education & Community/ Developer	New primary school to address needs within precinct over time
21.	New 1.8 ha park at Hill Road	Developer	New park linked to proposed network of landscaped open spaces
22.	Village park at Uhrig Road and Carter Street as a termination for Dawn Fraser Avenue axis	Developer	Village park intended as multi-purpose space to serve needs of residents and workers within precinct
23.	Village square as a central meeting place on Uhrig Road 'main street'	Developer	Village square to form focal point and gathering place for events or relaxation and provide a focus for retail, entertainment and social activity
24.	Public access along Haslams Creek and construction of Haslams Creek southern bank south of John Ian Wing Parade	Developer	To permit public access to Haslams Creek waterfront with a shared pedestrian and cycle track connected to greater Sydney Olympic Park, Parklands network

## 7 Next Steps

Following exhibition of this rezoning proposal, including the indicative structure plan and accompanying development control plan, the matters raised in the submissions will be assessed and where required, the rezoning proposal will be amended.

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

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