

An aerial photograph of Western Sydney, Australia, overlaid with various urban planning and landscape design elements. These include colored lines representing roads, rail, and waterways, as well as shaded areas indicating different land use zones. The map shows a mix of developed urban areas and green spaces.

**Hassell**

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ARCHITECTURE + URBAN PROJECTS PTY LTD

**Studio Hollenstein**

# WESTERN SYDNEY AEROTROPOLIS URBAN DESIGN AND LANDSCAPE PLAN REPORT



# **PART 3: THE INITIAL PRECINCTS**

**The urban design frameworks for each initial precinct establish a pathway for landscape-led design outcomes. Country, water and parkland frame dense urban neighbourhoods and other employment lands, where a sustainable city model will emerge over the next forty years.**





An aerial perspective of the Aerotropolis Core, looking north east.



# **AEROTROPOLIS CORE, BADGERYS CREEK AND ADJACENT WIANAMATTA - SOUTH CREEK**

**A connected system of landscapes, land use, transport and social infrastructure, the urban design framework provides a vision for a new city.**





Artist impression of the Aerotropolis Core metropolitan centre



# URBAN DESIGN FRAMEWORK

## AEROTROPOLIS CORE

The Core is the City Centre for the Aerotropolis, forming a complementary centre to the metropolitan cluster of centres including Penrith, Liverpool and Campbelltown.

The Core is a Parkland City in the true sense. It is a dense urban neighbourhood focused on both the new metro station and Wianamatta - South creek system. Thompsons Creek will form the regional park, complemented by a network of parklands associated with retained creeks.

It has the capacity accommodate 50,000 to 60,000 jobs and up to 24,000 residents by 2056.

### Annotations

1. An intense, large centre with several nodes - one at the Metro Station; a northern focus integrated with creek parkland and Fifteenth Avenue; a Kelvin Park centre.
2. Lower order, but still intense employment land lies north and west of the centre - each with its own focus amenity.
3. West of Badgerys Creek Road, development is coordinated over time to achieve creeks and existing vegetation in linked open space.
4. Open space aligned to existing ephemeral creeks.
5. Larger ridge top parks help share views and connect Wianamatta to the urban core.
6. Kelvin Grove is provided impetus via a potential additional Metro station (not a government commitment).

## BADGERYS CREEK

The Badgerys Creek precinct is entirely employment focused. It will complement the role of the business park within the Western Sydney International (Nancy-Bird Walton) Airport as well as the Northern Gateway employment functions.

Flanked by Badgerys Creek and the Wianamatta - South Creek, these major green corridors will provide the amenity for future workers. Centres providing conveniences will help to activate these corridors and the employment zone. The precinct will comprise logistics, commercial industry, high technology industry and associated employment uses.

7. Thompsons Creek and the adjacent Wianamatta become the Aerotropolis regional park.
8. Badgerys Creek coordinated into an enterprise grid, utilising existing road and lot patterns where possible.
9. Badgerys Creek precinct centres aligned with the linear creek corridors to maximise amenity benefits.
10. Coordinated development north of Elizabeth Drive to integrate with Northern Gateway west of Badgerys Creek.
11. Waste transfer station retained for circular economy site (consistent with PIC), with potential future network shown.
12. Land north of the M12 corridor becomes conservation area.
13. High risk\* (dark green) flood areas limited to creek and ecological functions.

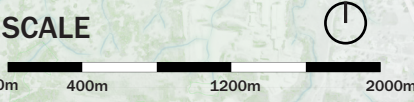
## WIANAMATTA - SOUTH CREEK

The Wianamatta - South Creek precinct is defined by the Environment and Recreation zone as established by the Western Sydney Aerotropolis Plan. It accommodates a range of environmental and recreation functions, including water flows associated with the creek environment, ecology and biodiversity functions, recreation (walking) paths and separate active transport (bicycle) routes, as well as contained areas of active recreation, particularly focused around the Thompsons Creek regional park. The precinct is complemented by a series of east-west corridors through the Aerotropolis Core and Badgerys Creek precincts to achieve a sustainable green grid.

14. Medium risk\* flood areas provide active transport and parkland uses.
15. Low risk\* flood areas contain active recreation and shared passive open space areas through to development.
16. fragmented land within the Environment and Recreation zone in the Wianamatta South Creek Precinct is publicly accessible through long term development.
17. Existing quarries transition over time to employment land uses. Vegetation is retained where it aligns with flood and biodiversity objectives.

\*Risk areas as defined by Liverpool City Council.





Note: This project has considered the extent of the Wianamatta-South Creek corridor adjacent to the initial precincts. Future precinct planning work throughout the Rossmore and Kemps Creek precincts will consider appropriate land use, urban design and landscape outcomes for the additional parts of the Wianamatta-South Creek corridor not addressed in this report.



# OPPORTUNITIES AND CHALLENGES

## The key opportunities and challenges to address in the urban design framework

### AEROTROPOLIS CORE

#### Opportunities

- Leverage the accessibility and catalyst opportunities provided by the Metro Station
- Utilise the ephemeral creek network and ridgetops to establish the structuring elements of the urban design framework
- Retain existing roads where they can contribute to a legible urban neighbourhood arrangement
- Retain and enhance existing vegetation that has biodiversity values
- Provide urban density and activation to the Wianamatta interface
- Leverage Thompsons Creek acquisition as the focus for a city centre regional park
- Respect and conserve heritage items

#### Constraints

- Address existing ownership and lot arrangements
- The Kelvin Park road structure and lot arrangement does not suit a city / mixed use outcome
- Locate land uses to reflect ANEF contour requirements established by the WSAP
- Building heights and densities will need to conform to OLS limitations
- No development to be identified within the 1% AEP mapping
- Existing extractive industry activity
- Provide for Metro service and tunnel areas

### BADGERYS CREEK

#### Opportunities

- Utilise existing road corridors
- Leverage access opportunities associated with Elizabeth Drive
- Provide connections over Badgerys Creek to integrate with the Northern Gateway precinct
- Retain and enhance existing vegetation that has biodiversity values
- Respect and conserve heritage items
- Protect avoided land as identified in the Cumberland Plain Conservation Plan for their high value biodiversity

#### Constraints

- Land fragmentation and ownership patterns, especially south of Elizabeth Drive
- A disconnected road network
- Substantial extractive industry activity
- Future noise and public safety areas resulting from the airport require land use limitations
- Access limitations north of the future M12
- Existing waste transfer activities north of Elizabeth Drive

### WIANAMATTA

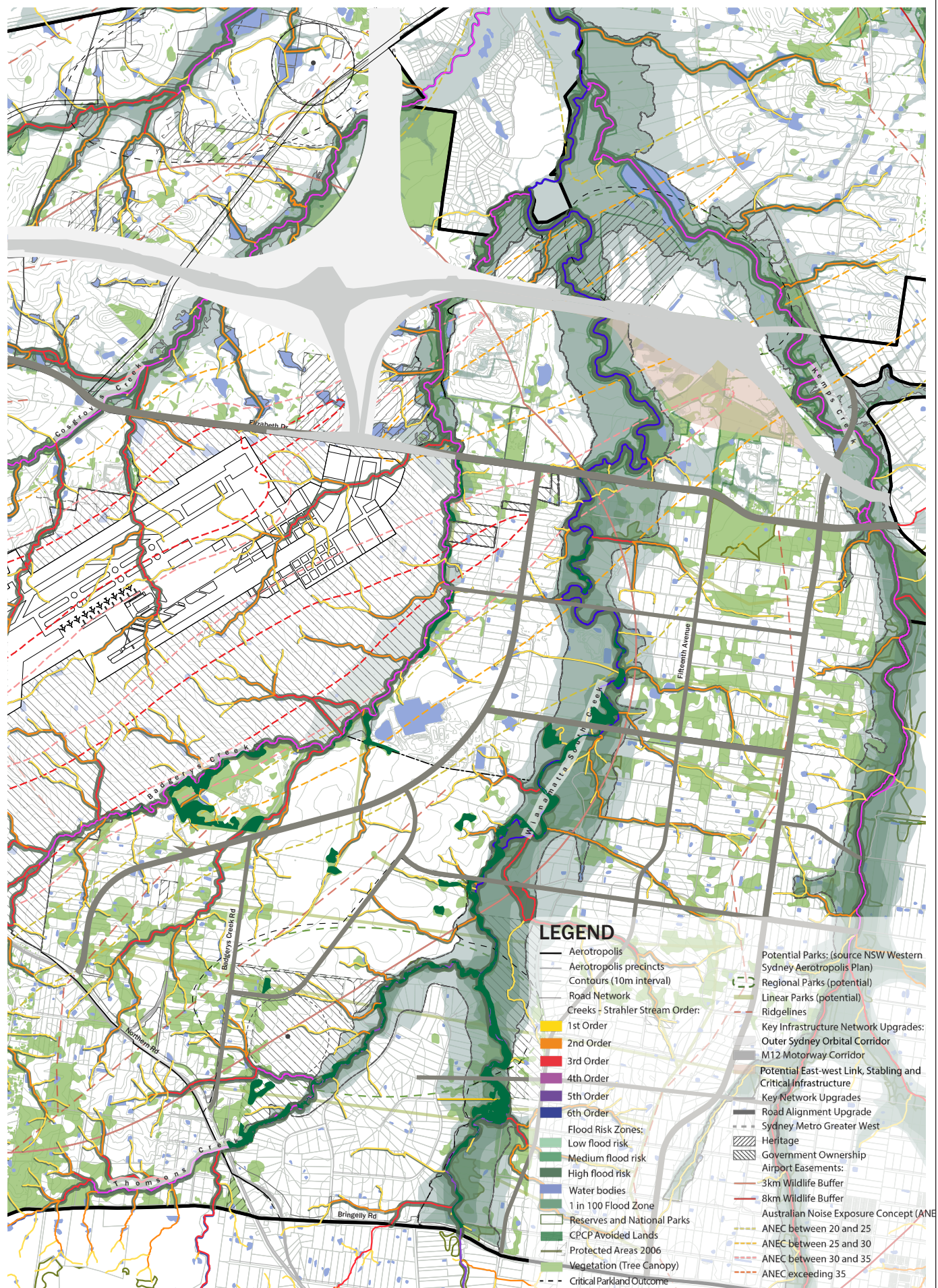
#### Opportunities

- Retain and enhance vegetation of biodiversity value
- Respect and conserve heritage items
- The Wianamatta corridor can function as an active transport network
- Provide active transport crossings of the creeks
- Protect avoided land as identified in the Cumberland Plain Conservation Plan for their high value biodiversity

#### Constraints

- Private and fragmented ownership across the Wianamatta corridor
- The 1% AEP flood extent limits development opportunities
- Storm water flow requirements need to be considered when planting new vegetation so as not to cause problematic blockages





# THE KEY PRINCIPLES AND STRUCTURE

**Complementing the Western Sydney Aerotropolis Plan and the common principles applying to all precincts, the following spatial and design principles have been used to inform the urban design frameworks across Aerotropolis Core, Badgerys Creek and Wianamatta - South Creek.**

## THE STRUCTURE

The urban structure of the urban design framework is described in the diagram overleaf, and identifies:

- A structured urban centre with a grid of streets connecting Thompsons Creek and Metro
- A mixed use frame to Thompsons Creek, enhancing its function as a regional park
- A focus on the Wianamatta - South Creek system as the driving component to the Western Parkland City
- East of Badgery's Creek Road: Neighbourhood clusters framed by existing ephemeral creeks and associated parkland
- West of Badgery's Creek Road: The ephemeral creek and associated vegetation disintegrates the enterprise structure
- Badgery's Creek South: A clear urban grid focused on existing roads, with integrated green corridor connections enhancing urban cooling and amenity
- Badgery's Creek North: A connected enterprise neighbourhood linking across Badgerys Creek to the Northern Gateway precinct

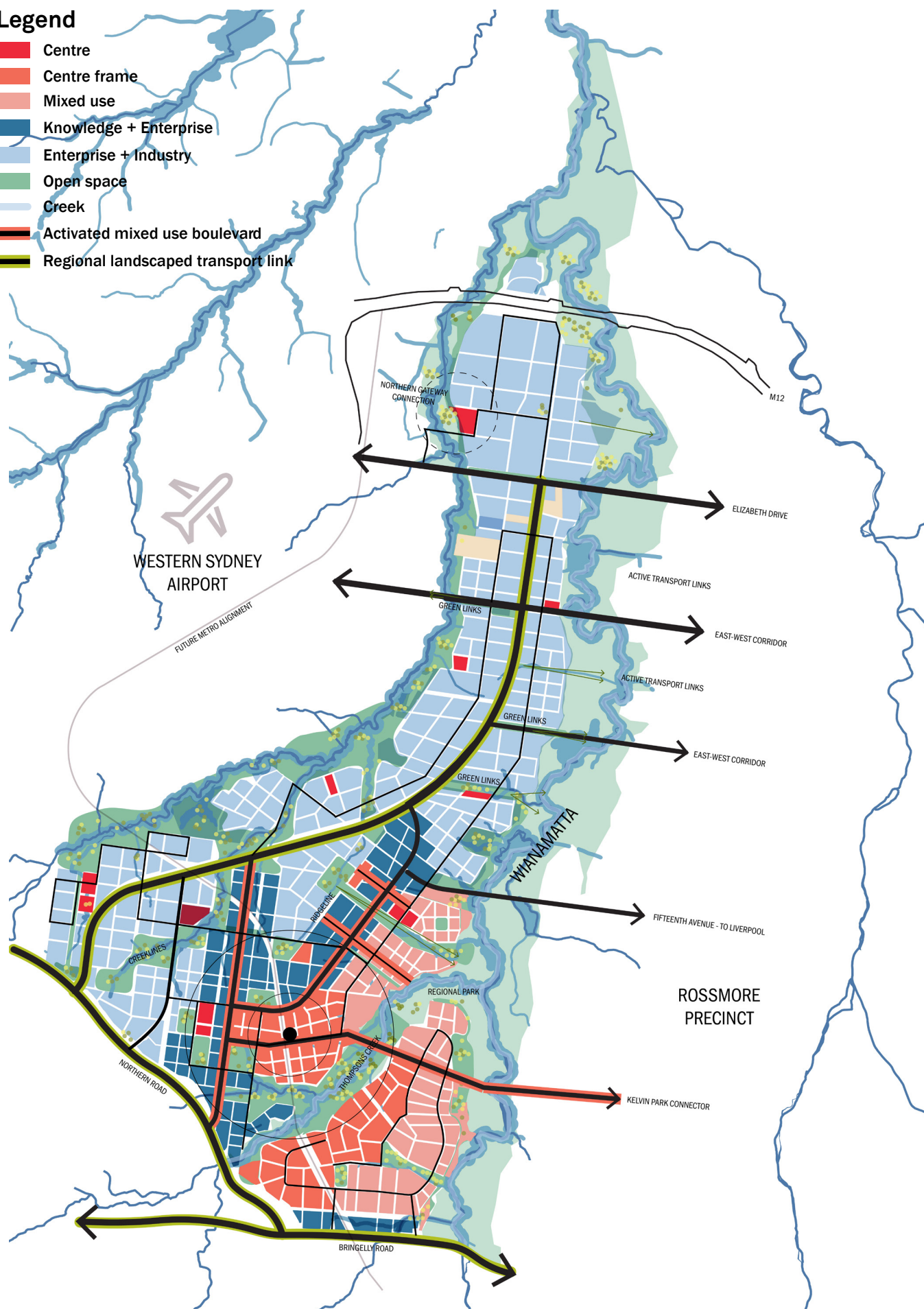
## SPATIAL AND DESIGN PRINCIPLES

- The street grid is aligned to the creeks and ridgelines
- Open space is aligned to creeks, existing vegetation and ridgelines
- Parks containing active recreation are located on the ridgeline pertaining to the Aerotropolis Core, and to Wianamatta - South Creek Creek
- The Aerotropolis Core is a highly structured and connected urban environment with a clear relationship between streets, contained parks and linear creek corridors
- Density and centres are located adjacent to creeks or open space amenity
- The green grid connects between Badgerys Creek and Wianamatta - South Creek via ephemeral creek corridors within the Aerotropolis Core or wider planted avenues within the Badgerys Creek precinct
- The street hierarchy is designed to provide direct rapid bus access from Liverpool, Penrith and Campbelltown to the core
- Employment density is maximised within the 800 metre catchment of the Metro Station
- Within the mixed use zone, areas of residential development may occur, subject to employment targets being achieved
- Whilst the Eastern Ring Road is a focus for freight traffic, parallel streets offer frequent public transit functionality
- Service access roads generally provide an interface to major roads such as the Eastern Ring Road
- Active recreation is located outside of high and medium risk flood areas
- Active recreation is located to be accessible to public transit, and where possible, co-located with other social infrastructure such as schools
- Arrival points are given definition through parkland interfaces or urban boulevards

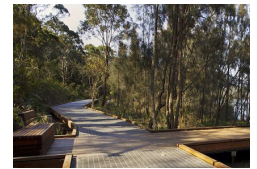
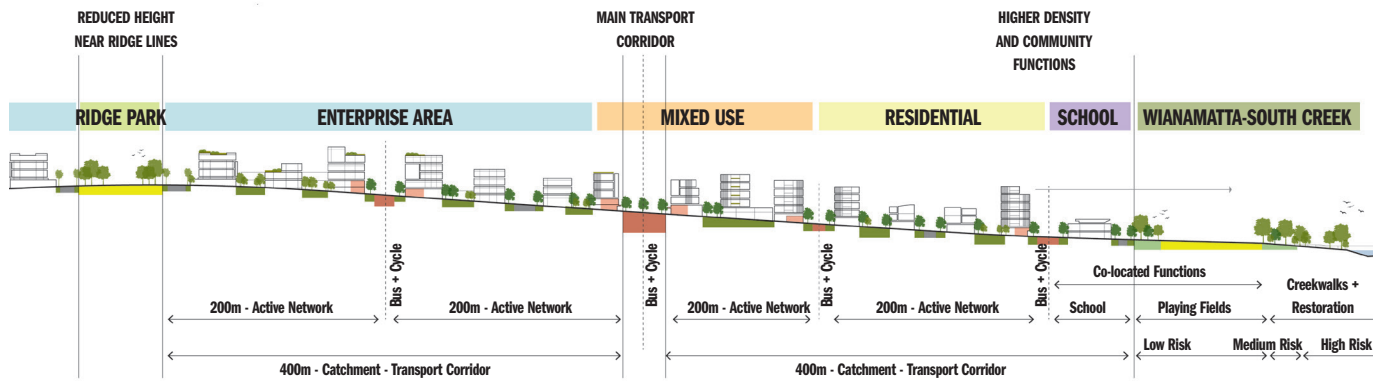


## Legend

- Centre
- Centre frame
- Mixed use
- Knowledge + Enterprise
- Enterprise + Industry
- Open space
- Creek
- Activated mixed use boulevard
- Regional landscaped transport link





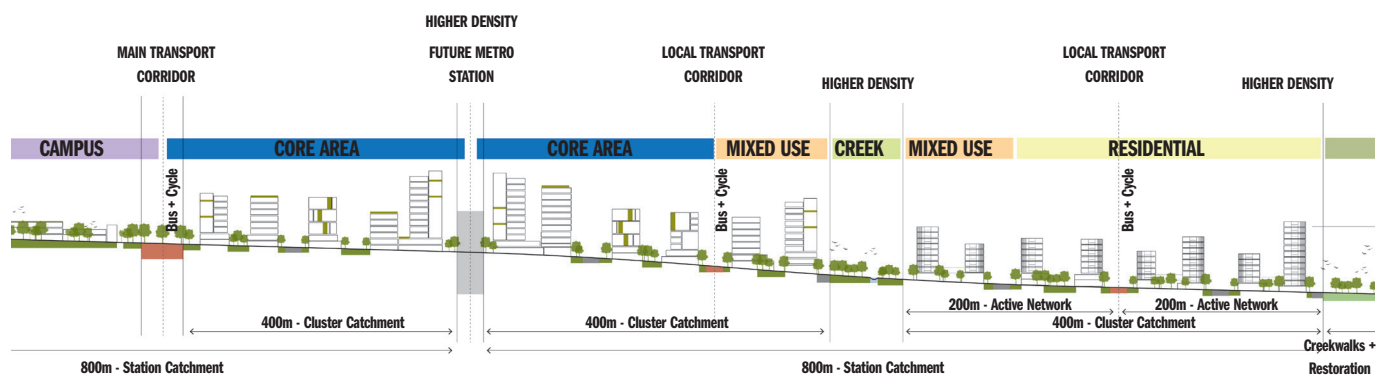


## RIDGE TO WIANAMATTA PRINCIPLES

The section diagram above describes the general relationship between built form, topography and the Wianamatta across a range of land uses:

- Local parks are activated by dense, high quality enterprise uses, and offer amenity to attract quality businesses
- A primary rapid bus connection and active transport pathways service the broad catchment of enterprise and mixed use zones
- A secondary frequent bus corridor can service enterprise and residential neighbourhoods
- Mixed use and employment activity is aligned to the rapid bus corridor
- Residential neighbourhoods are limited and contained away from busy roads
- Schools integrate with local centres and activate the Wianamatta corridor



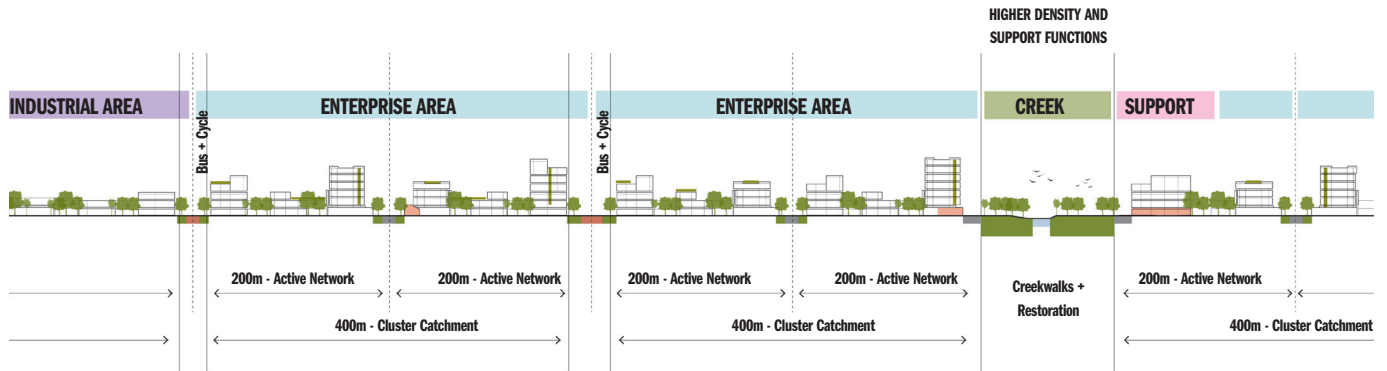


## INTEGRATING DENSITY WITH AMENITY

The section diagram above describes the approach to the alignment of density across the Aerotropolis Core and Badgerys Creek precincts:

- The highest densities are arranged within the high amenity city core, associated with the Metro, and adjacent the Wianamatta corridor
- A clear and urban interface is provided to open space, creeks and Wianamatta corridors
- Mixed use activity should activate creek corridors within a walkable catchment of the Metro
- Residential development may be located outside the Metro walkable catchment, subject to demonstration that employment targets are being achieved
- Schools and local centres should be arranged to activate open space and the Wianamatta corridor where possible





## ACTIVATING ENTERPRISE AREAS

The section diagram above describes how Enterprise areas should be arranged to allow integration with transport, open space and centres:

- Frequent bus and active transport corridors should be capitalised upon to ensure a walkable catchment to jobs
- The street grid should enable walkable access to frequent bus corridors
- Support areas such as local centres should be located to activate creek / open space corridors
- Bus corridors will service support / local centres



## Attracting Jobs and Industry

The following elements need to be combined across the Aerotropolis Core and surrounding precincts to ensure high quality business can be attracted, and so that jobs targets can be achieved.



## Accessibility

- Sydney Metro Western Sydney Airport Line
- Frequent bus network
- Active transport
- Comfortable and attractive walking routes



## Dense Mixed Use

- Encouraging the 'rub' - creative interactions
- Amenity for time poor workers
- Clustered activity between industry facilitated via quality street networks
- Institution and industry clusters (e.g. universities)



## Nearby residential

- The half hour city
- Residential connected to centres by convenient and rapid transit

## Amenity

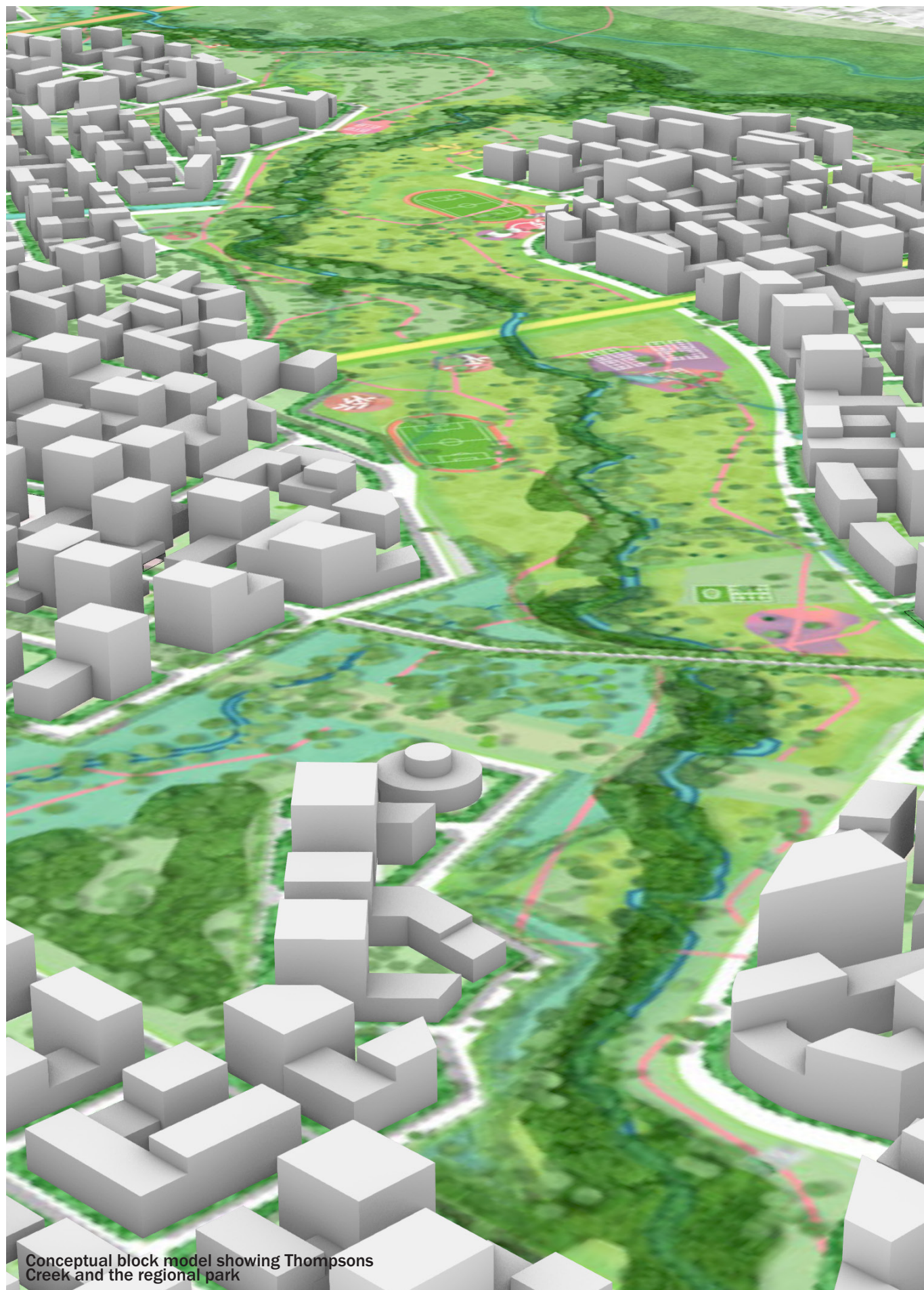
- Quality open space near to workers
- Density adjacent to amenity
- Creating a centre identity



# THE BLUE-GREEN INFRASTRUCTURE FRAMEWORK

**The Blue-Green infrastructure framework is an interconnected network of creeks, drainage basins, parks, playing fields, walking paths, cycling tracks and streetscapes. Vegetation and planted areas on private lots also contribute to this framework.**





Conceptual block model showing Thompsons Creek and the regional park



# PUBLIC DOMAIN PLAN

## Existing creeks and open space is a key structural and organising element of the urban fabric.

The Public domain framework of the Aerotropolis Core and Badgerys Creek consists of an interconnected, well accessible and diverse framework of waterways, parks and open spaces, streetscape and civic spaces.

With Thompson Creek regional park at the heart of the Aerotropolis Core, it is the green and blue infrastructure including local and district parks, creeks and stormwater land that form the principal network of the public domain.

These areas accommodate a range of functions beyond recreation including:

- creek lines, water retention and soil permeability within the urban landscape,
- protecting existing native vegetation and wildlife habitats, especially those identified in the draft Cumberland Plain Conservation Plan and to meet the requirements of the Biodiversity Certification Order of the Sydney Region Growth Centres 2006
- providing a foundation for biodiversity enhancement
- allowing wildlife to migrate through the urban fabric
- providing new urban tree canopy to achieve urban cooling
- containing and protecting culturally significant landscapes and heritage sites

→ active transportation routes - both regional and local. The Public domain framework connects the precincts to the regional systems of Wianamatta and Badgerys Creeks. This interconnected system provides a foundation for achieving a healthy, resilient and cool parkland city.

The open space framework has been guided by performance criteria outlined in the following:

- Draft Greener Places Design Guide (GANSW, 2020)
- Penrith City Council Sport and Recreation Strategy (2020)
- Liverpool City Council Recreation Open Space and Sports Strategy 2018-2019
- Western Sydney Aerotropolis Social Infrastructure Needs Assessment (GHD, October 2020)
- NSW Government Risk Based Framework for urban waterway management

### – Accessibility and Connectivity:

- Proposed open space framework is a well connected system. Most urban areas in Aerotropolis Core and Badgerys Creek precincts are within 400m walking distance to the nearest open space and accessible by public transport and active transport.
- Park edge streets are provided

along edges of built form and open space to ensure active interface and public access.

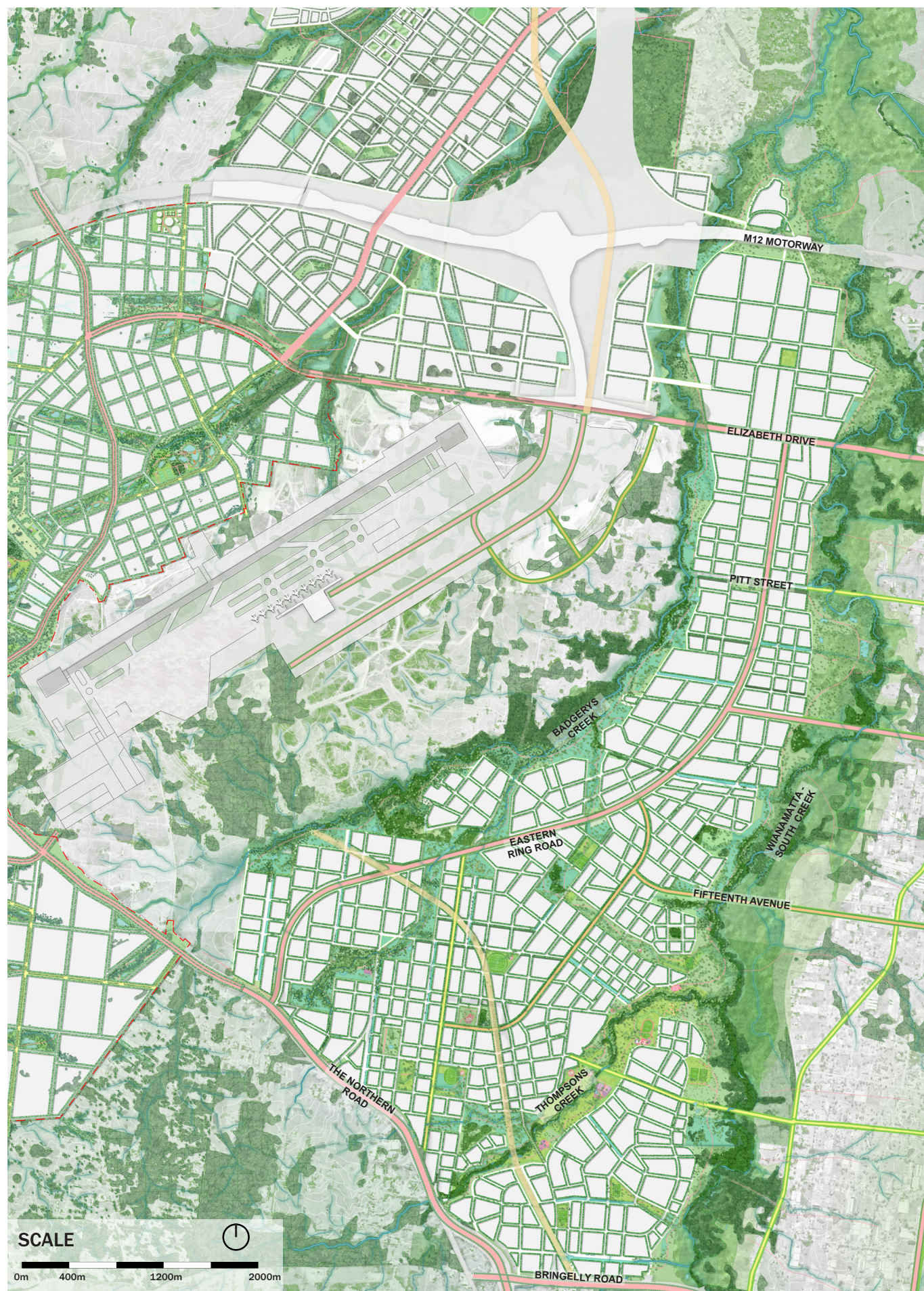
### – Distribution and Quantity:

- Distribution of open space is a reflection of identified key landscape elements as led by the landscape urbanism principles (waterways, ridgetops, existing vegetation). This is complemented by additional urban parks to achieve even distribution throughout the precincts in proximity to residents and worker population.

### – Size and Shape: Size and shape of open space varies, reflecting the range of functions beyond recreation.

- Quality and diversity: Diversity of open spaces is derived from its position and function within the system. The open space system will have a natural "Cumberland Plain" parkland character with areas of greater recreation and leisure intensity.







# OPEN SPACE CLASSIFICATION, CHARACTER AND FUNCTION

The open space framework across the Aerotropolis comprises local, district and regional parks. In addition, existing creeks and drainage infrastructure provide the 'blue' to the open space 'green'. This network has a variety of characteristics depending on location, function and surrounding context.

This section describes the approach to both the classification of parks, and the required landscape responses dependent on character.

## Classification:

There should be appropriate distribution of open space based on classification throughout the Aerotropolis:

- Local: open space servicing a local neighbourhood, with homes generally not more than 400 metres from a local park.
- District: Easily accessible by active transport and public transit, homes are generally within 2 km of district parks (as a maximum). Parks contain district level social and recreational infrastructure.
- Regional: A major new park for the Aerotropolis, located adjacent to the city core, with excellent public and active transport access. Regional scale social and recreational infrastructure is contained within the park. The creek and land adjacent to Thompsons Creek has been identified for this purpose, with acquisition already identified in the SEPP maps. The intent is to provide for contiguous open space connecting the Thompsons Creek acquisition area to the existing Liverpool Council reserve between Wianamatta / South Creek and Ramsay Road.

## Character and Function:

### Alluvial Parklands along Wianamatta and Thompsons Creeks

- Alluvial parklands are core biodiversity and habitat corridors.
- Active recreation and park and community amenities of a regional and district character are included outside of 1% AEP flood zone.
- Passive, non structured recreation (like walking path and boardwalks) is incorporated in medium flood risk zone, providing impact on riparian corridor is minimised.
- Regional active transport routes are incorporated within the parklands framework.

### Riparian Parklands

- Waterways of Strahler Order 3 and higher will be maintained in a natural state, including the maintenance and restoration of riparian area and habitat such as fallen debris. Where a development is associated with or will affect a waterway of Strahler Order 3 or higher, rehabilitation will occur to return that waterway to a natural state to enable natural processes and functionality to be maintained.
- Parks have sufficient width to allow for vegetated riparian corridor and pockets of passive and active recreation of a local character (fitness nodes, seating nodes, nature playgrounds, community gardens).
- Active transport routes are incorporated within these parks.

### Hilltop Parks

- These parks are established on the local high points to capture the breeze and allow for long views.
- Dependent on the size and

location, sportfields, active and passive recreation and associated park amenities of a district and local character are to be found with these parks.

### Local Urban Parks and Pocket Parks

- These parks are surrounded by built form and generally located within the local city core or neighbourhood centre.
- They are associated with community and cultural amenities like libraries and serve as a "village green" for local residents and workers.
- More "urban" in their nature, these parks can accommodate non-structured passive and active recreation, playgrounds, kick about spaces and community and park amenities of district and local character.

### Protecting vegetation

- A minimum of 67.31ha of Existing Native Vegetation (ENV) is to be protected in accordance with the Sydney Region Growth Centres Biodiversity Certification Order.
- Open space that is intended for conservation, and managed for biodiversity purposes is separate to open space for recreation.
- Protecting existing native vegetation within open space.
- These areas will be protected and enhanced and have no negative impact on the environment.

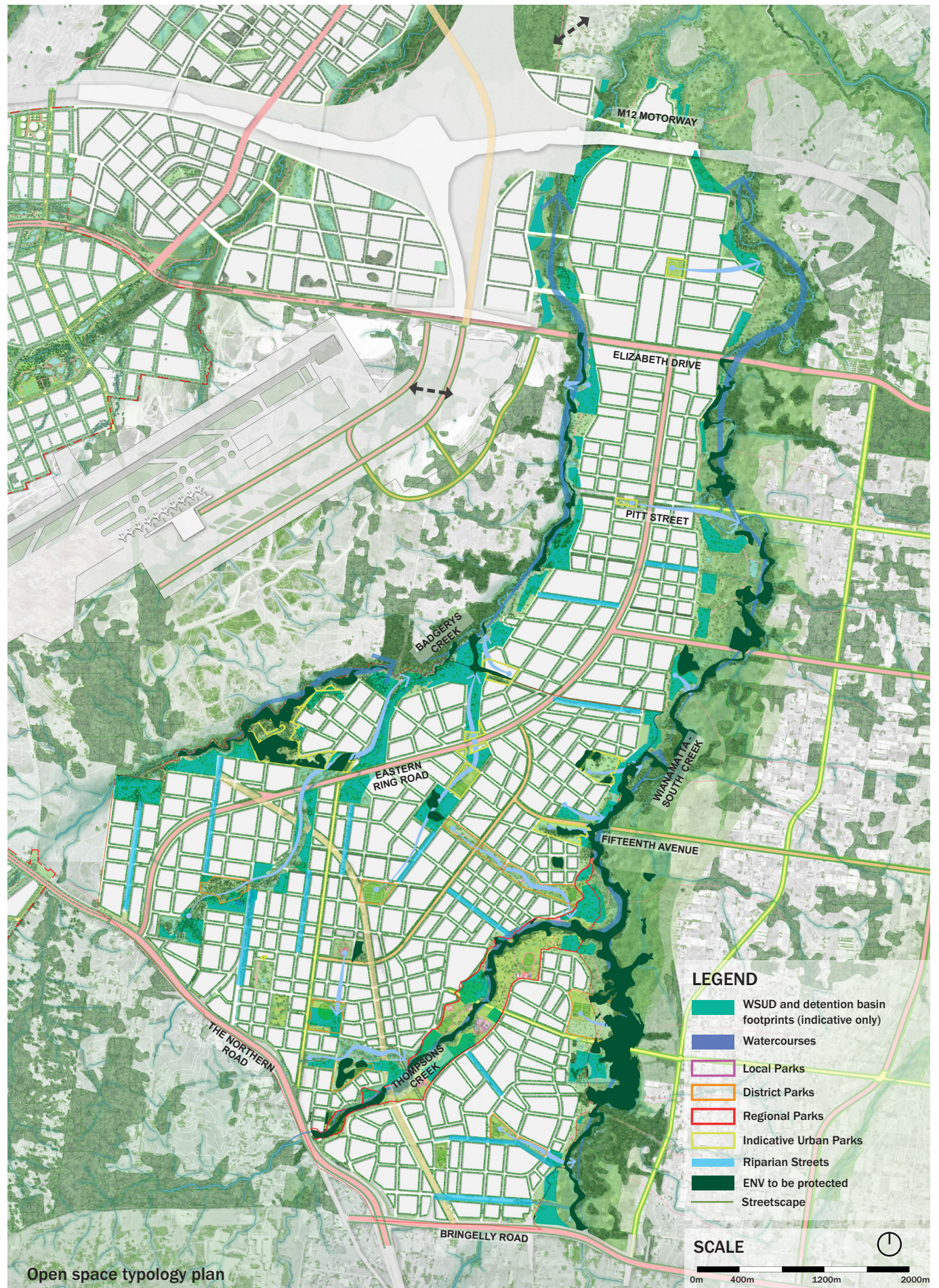
### Streetscape

- Multi layered continuous tree canopy and ground cover planting rich in diversity create a green and cool setting for everyday life.

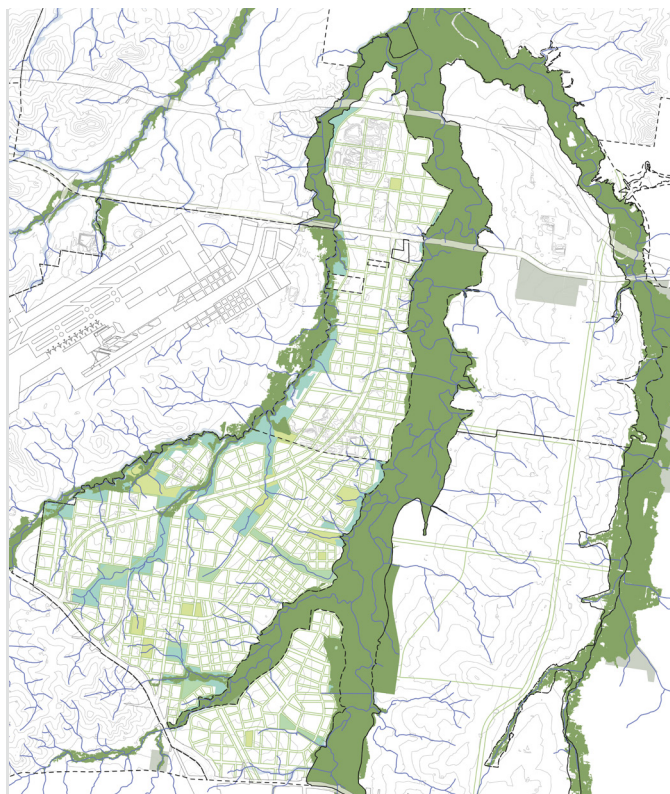
### "Gateway" landscape

- Abstracted Cumberland Plain landscape at entrances to the Parkland City from major roads, accommodated in road reservations, setback areas and open spaces.

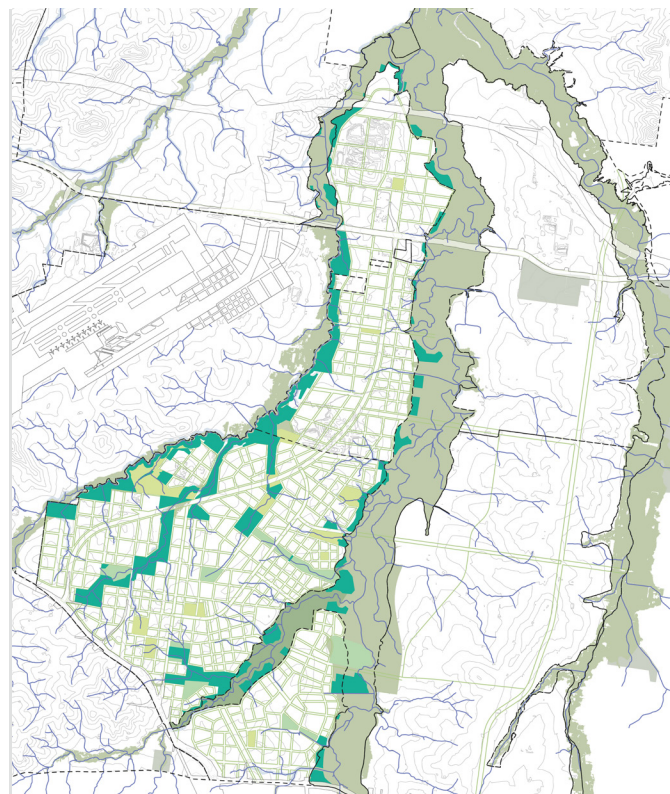




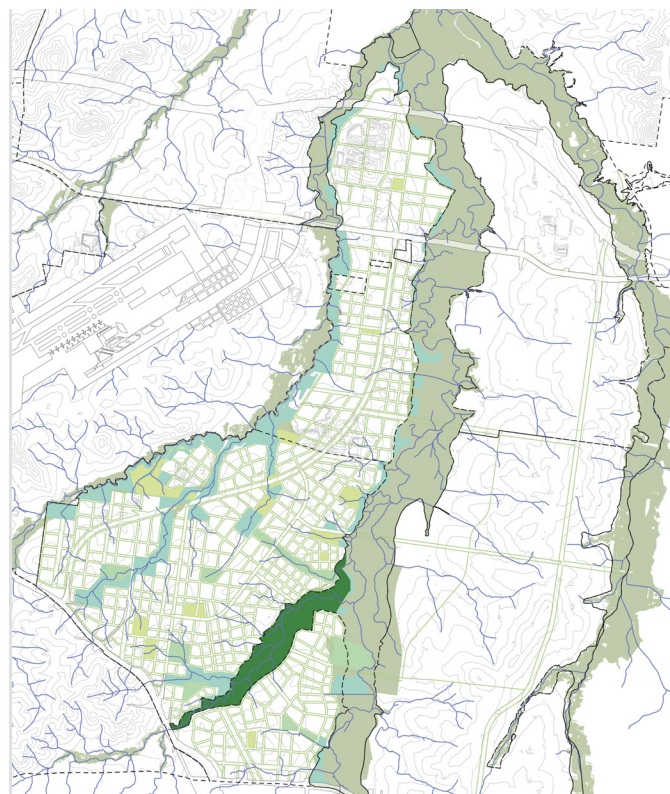




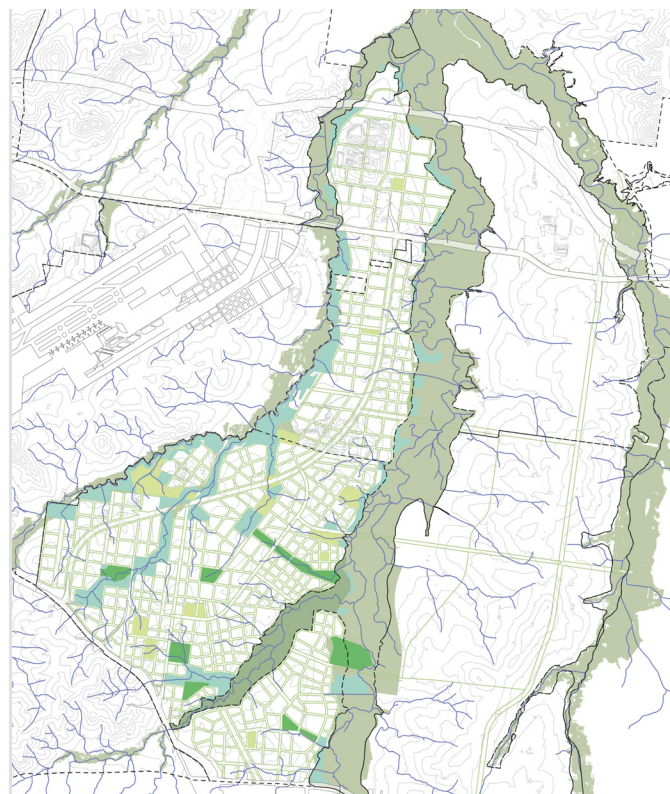
**Alluvial Regional Wianamatta -  
South Creek Parkland**



**Parklands along tributary creeks**

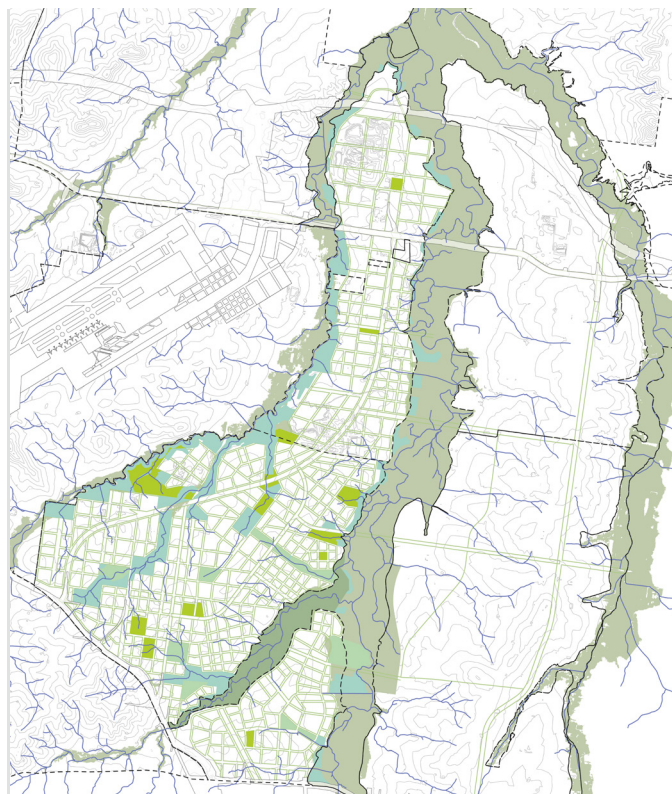


**Regional Parks**

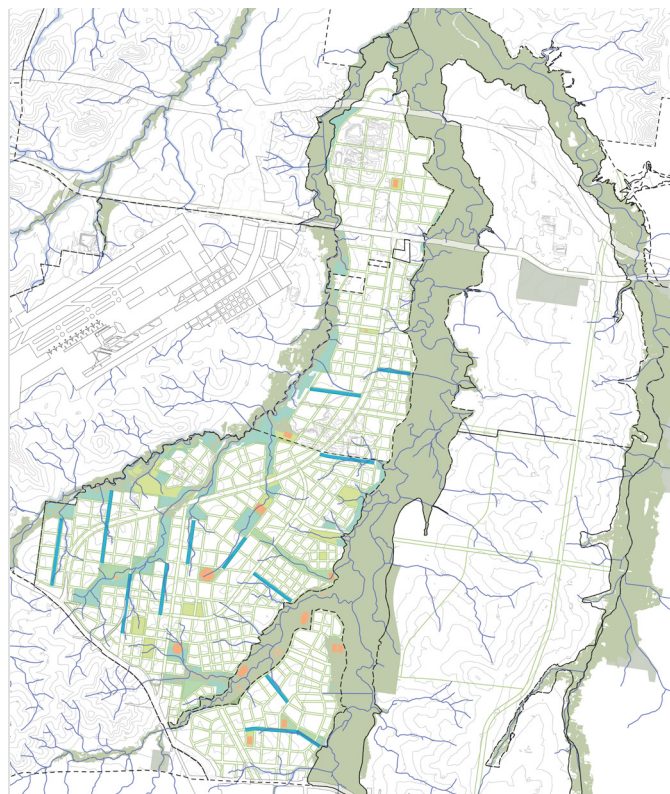


**District Parks**

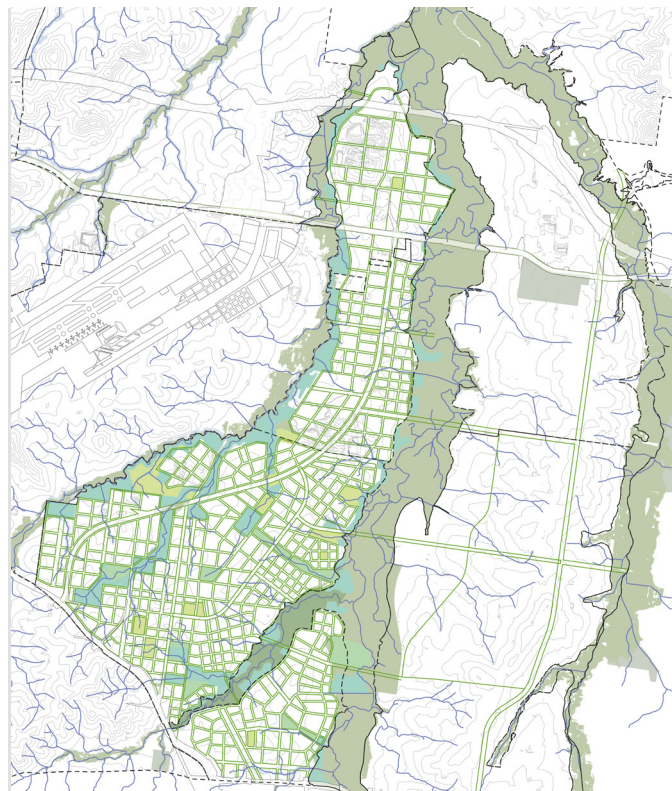




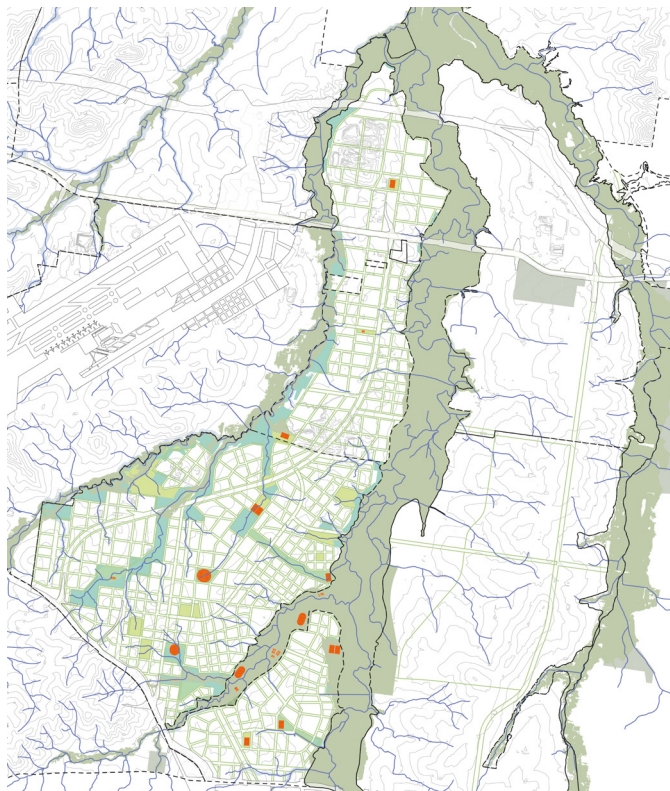
Local Parks



Riparian Streets



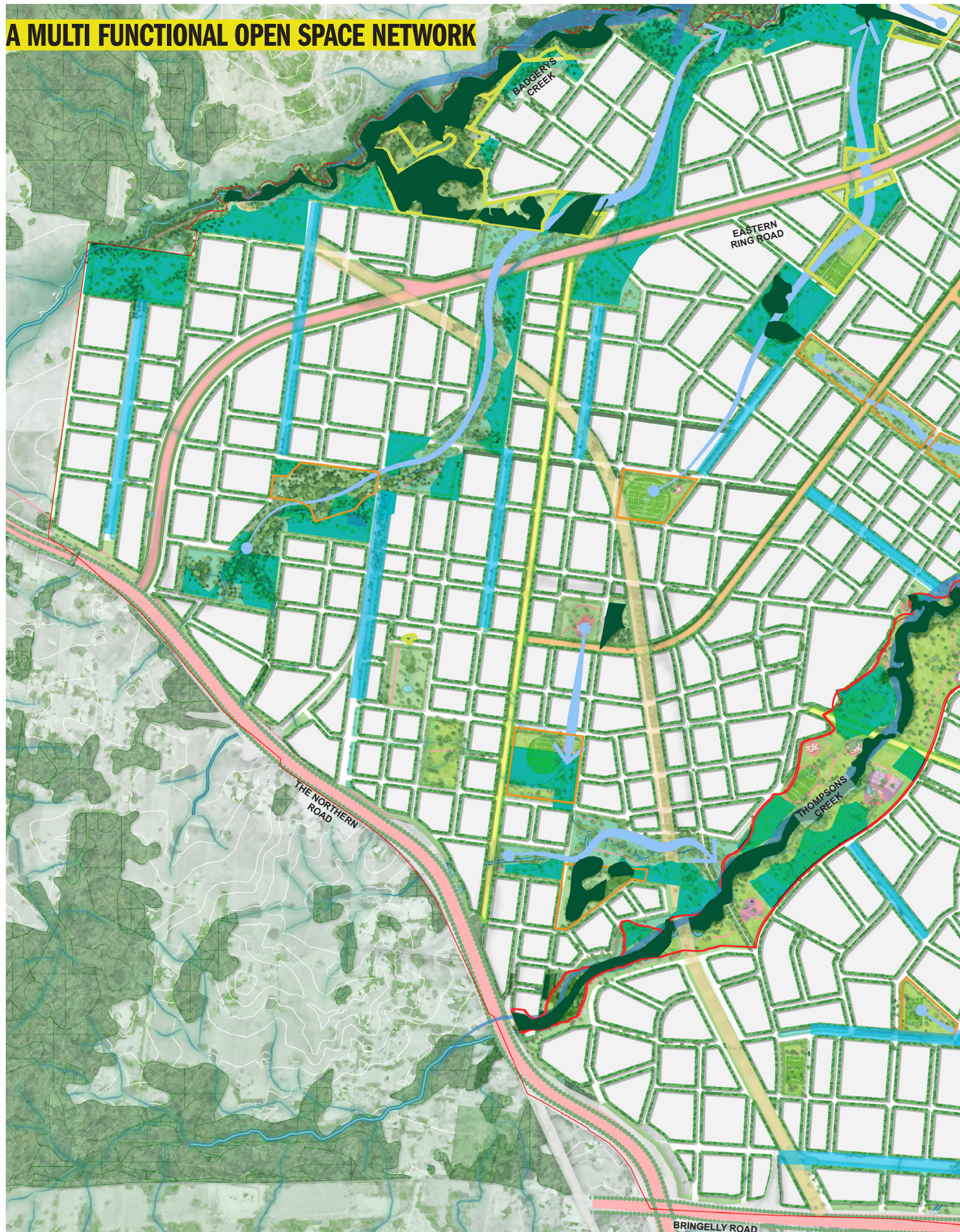
Streetscapes



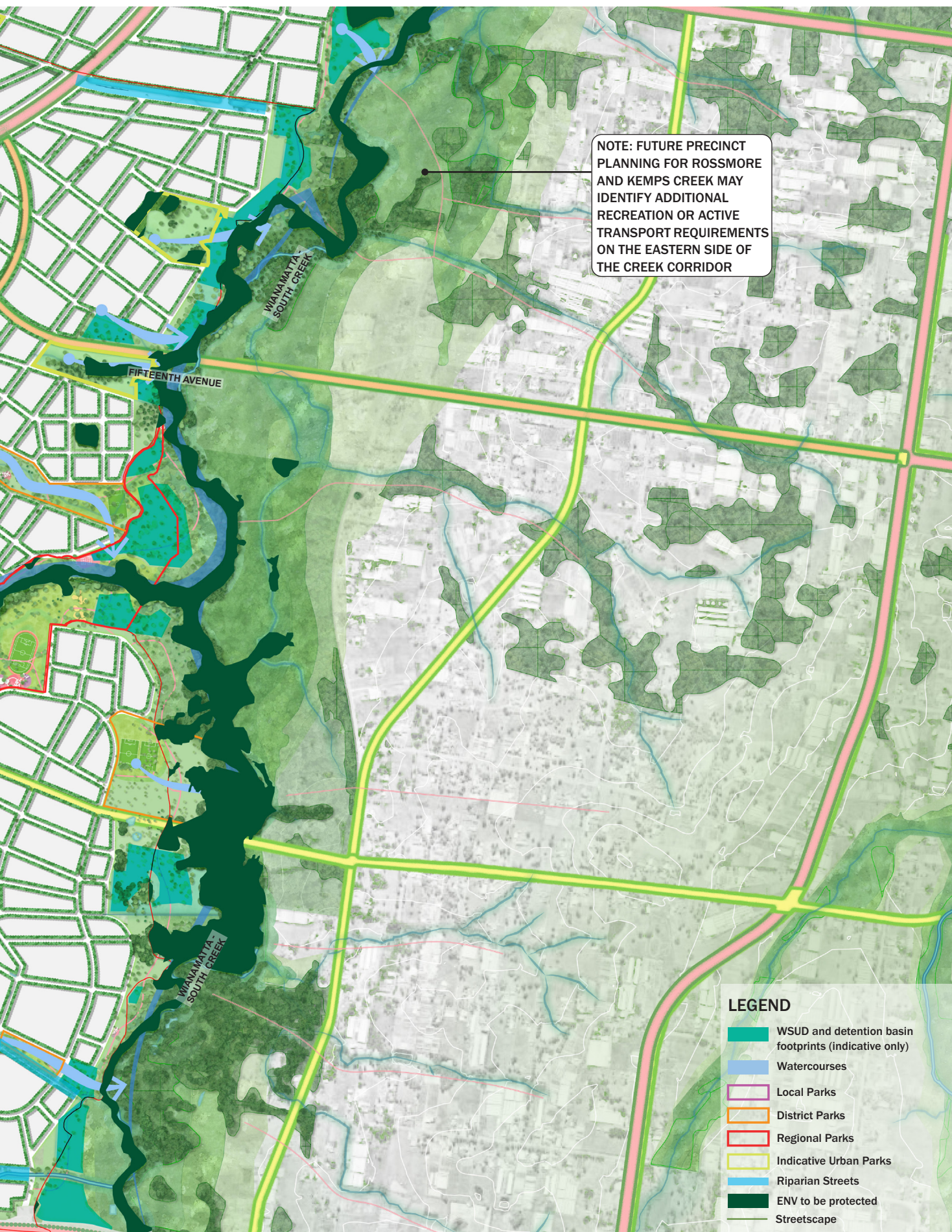
Active recreation



## A MULTI FUNCTIONAL OPEN SPACE NETWORK

















# ENV RETENTION

## With EcoLogical Australia

Biodiversity Certification provides direction to ensuring the protection of 2,000 ha of native vegetation in the Sydney Region Growth Centres (Growth Centres) and facilitating the strategic loss of ecological values on 'certified lands' without triggering further assessment under the former Threatened Species Conservation Act 1995 (TSC Act). To inform planning of the initial precincts for the Western Sydney Aerotropolis, this requirement only applies to land to the south of Elizabeth Drive in the Badgerys Creek precinct and Wianamatta-South Creek precinct and all the Aerotropolis Core precinct.

This strategic loss is offset through the retention and management of areas of higher ecological value across the Growth Centres and through a levy that will be used to protect and manage areas of high ecological value outside of the Growth Centres. A Strategic Assessment under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) was approved by the Commonwealth (Department of Sustainability, Environment, Water, Population and Communities (SEWPaC)).

Remnant native vegetation is present in reserves and parts of lots. Where remnant native vegetation is present, the following Threatened Ecological Communities (TECs) were identified in varying conditions in the Growth Centres portion of the Aerotropolis:

- Cumberland Plain Woodland, listed as Critically Endangered under the NSW Biodiversity Conservation Act 2016 (BC Act) and Commonwealth EPBC Act;
- River-Flat Eucalypt Forest, listed as Endangered under the BC Act;
- Castlereagh Swamp Woodland, listed as Endangered under the BC Act; and
- Castlereagh Shale-gravel Transition Forest listed as Endangered under the BC Act and Critically Endangered under the EPBC Act.

Biodiversity outcomes within the subject site are driven by multiple strategic objectives including:

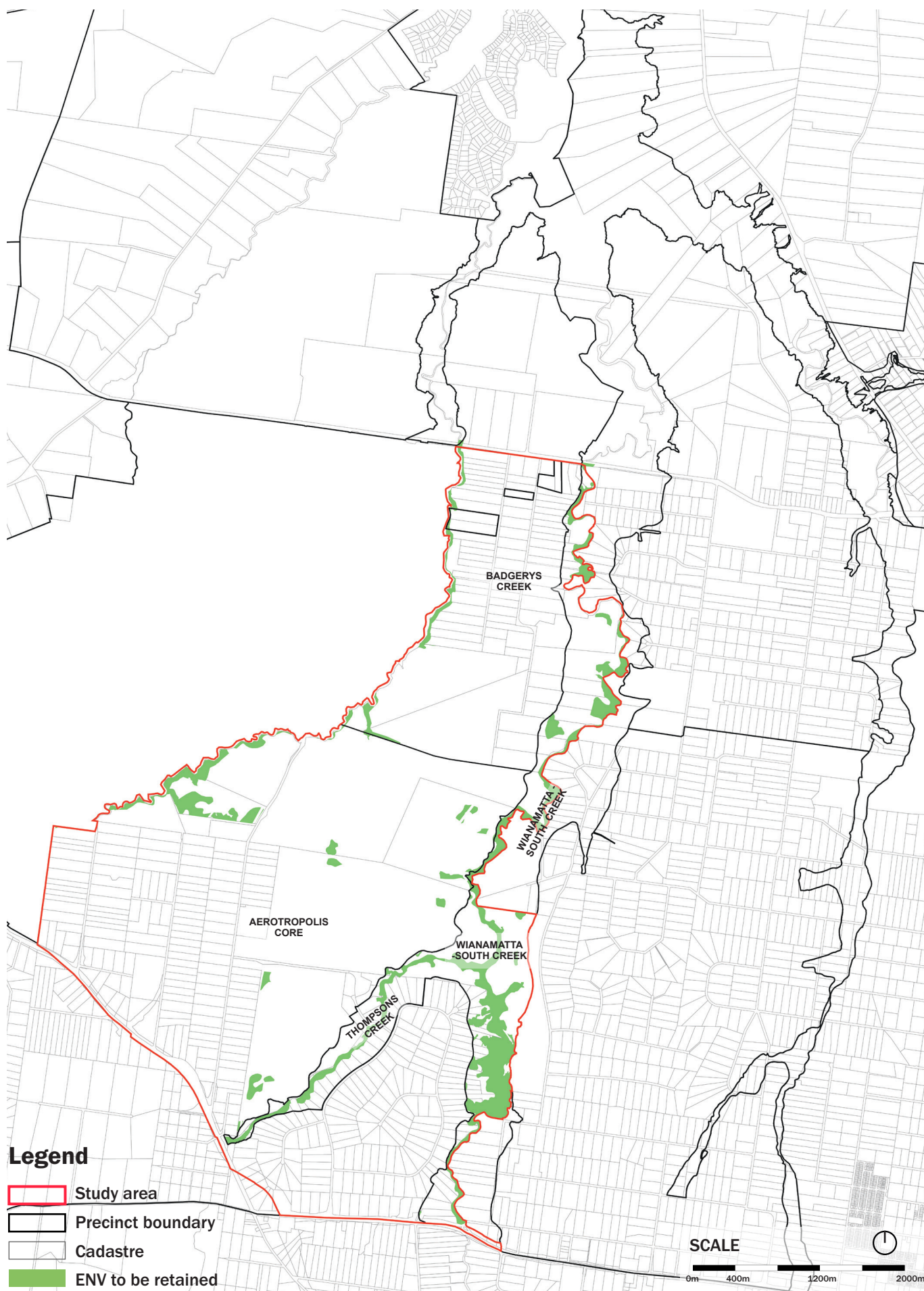
- the need to maintain parity with the Sydney Region Growth Centres Biodiversity Certification Order (Order). This requires the protection of a minimum 67.31 ha of Existing Native Vegetation (ENV) mapped in the Draft Growth Centres Conservation Plan 2007; and
- to deliver the vision of a Parkland City and maintain Wianamatta-South Creek as a regionally significant ecological corridor, which is identified both within the Greater Sydney Region Plan (Greater Sydney Commission, 2018) and the Western Sydney District Plan (Greater Sydney Commission, 2018).

Currently 68.81 ha of validated ENV is within land zoned Environment and Recreation under the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 (SEPP), resulting in a surplus of 1.5 ha of ENV.

The precinct plan has been shaped to provide for the areas of mapped ENV within open space network within the Aerotropolis Core precinct and Badgerys Creek precinct.

Changes to the statutory framework is also proposed to allow additional lands within the open space network to be included as ENV. It is recommended that these areas are zoned Environment and Recreation with appropriate planning controls in the SEPP. These lands will also need to be incorporated within the High Biodiversity Values map of this SEPP. This will result in retention of 23.58 ha of additional ENV within the open space network. This is 25.08 ha more than the minimum requirement for ENV protection.







# UNDISTURBED SOIL NETWORK

The Undisturbed Soil Network is a network of interconnected and undisturbed site soils, essential to the health of the Green and Blue systems.



Within the urban fabric of Aerotropolis Core and Badgerys Creek precincts, this system naturally occurs within the linear parklands formed along riparian corridors of tributary creeks and connects most of the urban parks through this system. Streets with additional planted strip have been proposed in areas where there is a need to strengthen the connection of this framework.

Within the areas of the Undisturbed Soil Network, natural soil profile is to be protected and engineered cut and fill and topographic alterations are to be avoided with the exception of localised earth works associated with WSUD and creek restoration, sportfields, playgrounds, excavations for park amenities footings, shallow sub-bases to paths, tree planting holes and the like.

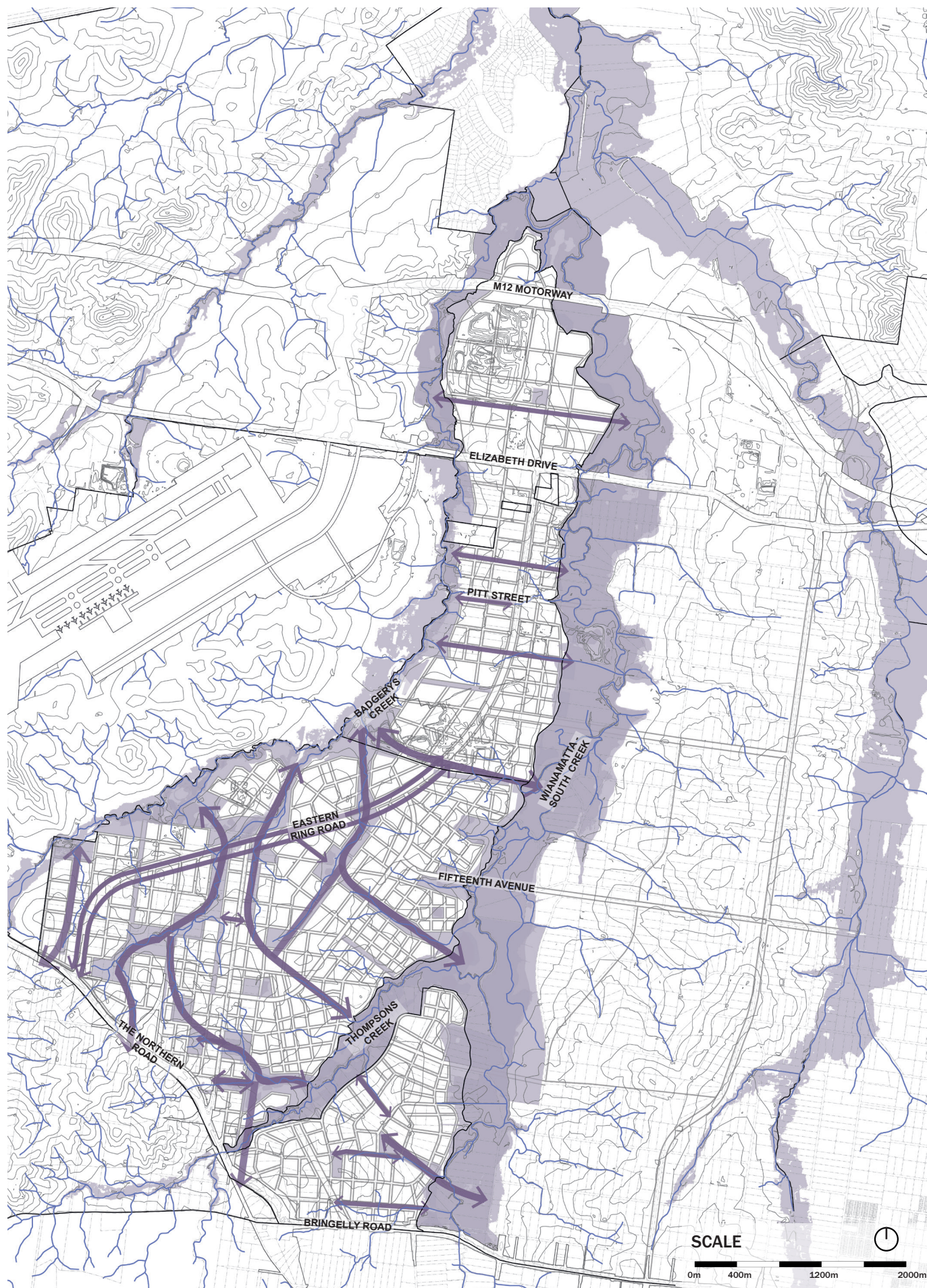
Creeks and the associated riparian zones are protected and incursion into this zone should be avoided. Works associated with WSUD and creek restoration and small structures like paths, boardwalks, stepping stone creek crossings and the like are permitted providing the impact is minimised and permissible with Office of Water Guidelines. Path and road structures crossings over creeks are elevated on piers to minimise the impact on the riparian zones.

During construction, A and B soil horizons are to be removed and stored separately and replaced in their correct order.

## LEGEND

-  Undisturbed soil within creeks riparian corridors and broader landscape parklands
-  Interconnected and undisturbed soil system within the urban fabric







# CULTURAL LANDSCAPES AND HERITAGE
















Notwithstanding two centuries of European colonisation, agriculture activity and private occupation, the existing Country remains incredibly significant in Indigenous Culture and heritage significance. Many existing sites have been mapped across Aerotropolis Core, Badgerys Creek and Wianamatta - and it is likely many others are unmapped.

Country being core to Culture - water, creeks, ridgetops, existing vegetation and the like are associated with the mapped sites of significance.

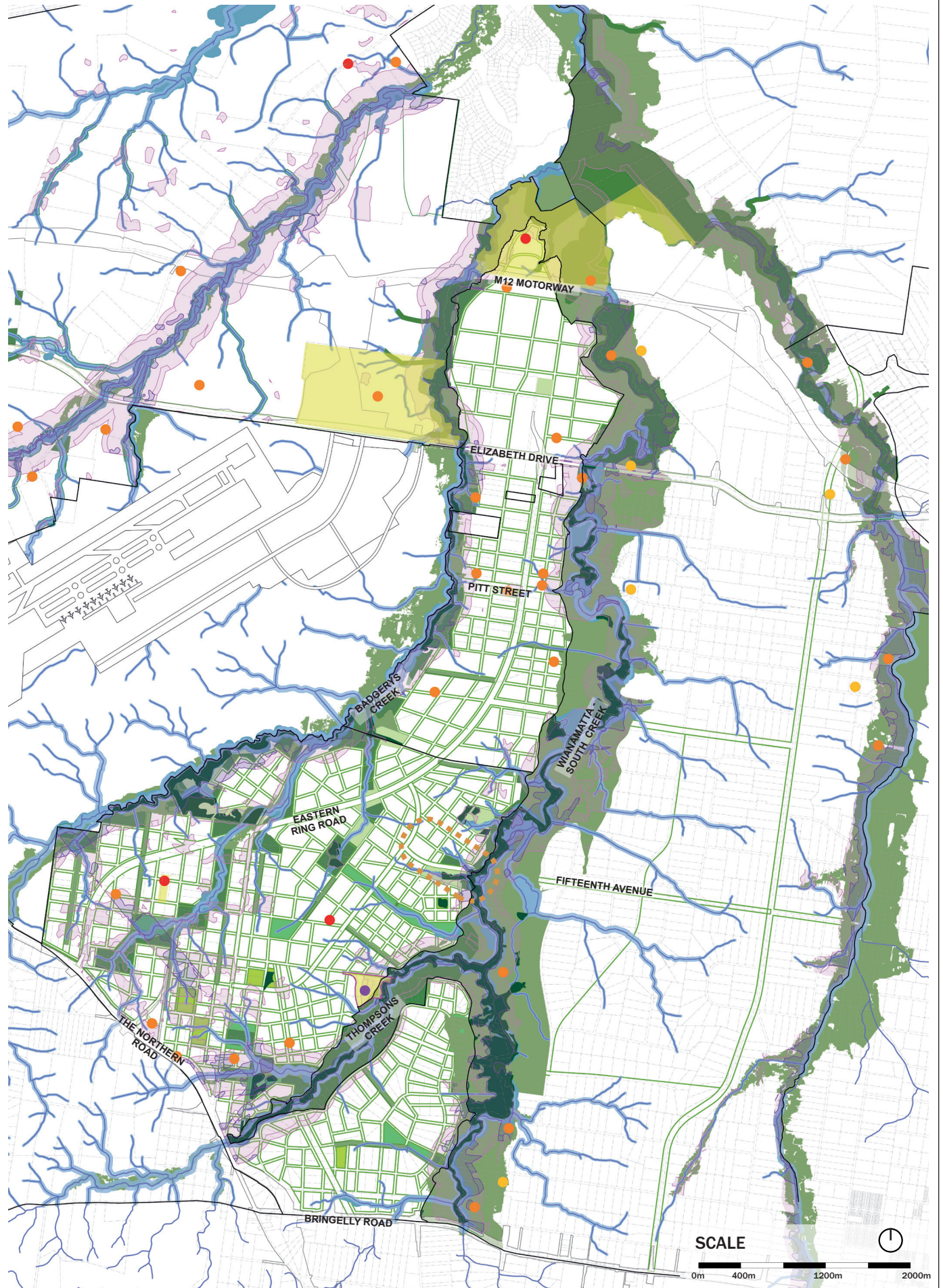
The overarching principle is to as much as possible retain these places in open space. Within the Aerotropolis Core, this means connecting ridgetops via ephemeral creek lines to the Wianamatta-South Creek and Badgerys Creek corridors. These connections are expressed as open space, and contain a range of functions for water, vegetation retention, stormwater, heritage conservation and cultural expression.

In addition, State listed heritage items are to be retained and enhanced through conservation and careful arrangement of new urban form around them. Any development within heritage curtilage must respect conservation management plans, and enable heritage relationships between built form and landscape to be maintained.

## LEGEND

-  Watercourses
-  Vegetated Riparian Corridor
-  ENV to be retained
-  Aboriginal cultural sensitivity – high
-  Aboriginal cultural sensitivity – moderate
-  Local Parks
-  District Parks
-  Regional Parks
-  Indicative Urban Parks
-  Stormwater infrastructure
-  SEPP heritage item
-  State Heritage Register item
-  Local heritage item
-  Potential heritage item (unlisted)
-  Conservation corridors







## AEROTROPOLIS CORE PRECINCT

The Aerotropolis Core precinct includes some areas of high and moderate Aboriginal heritage sensitivity, mostly along creek lines. In addition, several known Aboriginal heritage sites have been identified including artefact sites, modified trees (carved or scarred) and potential archaeological deposits.

The Aerotropolis Core precinct includes the only State listed heritage item within the initial precincts. Kelvin Park Homestead, located along Thompsons creek, is the only surviving example of a large pastoral estate within the Aerotropolis and demonstrates the pastoral development of Bringelly from 1818. Although only a small remnant (7ha) of the original 1200-acre site remains intact, the homestead and farm buildings in their current setting with extensive views over rural land, is still able to demonstrate the principles of 19th century farm estate architecture, planning and design.

Careful consideration has been given to Kelvin Park Homestead in the developing the urban design framework. More information about Kelvin Park Homestead is provided later in this report. The precinct also contains several locally listed and unlisted heritage items, including Mount Pleasant Homestead amongst others.

## WIANAMATTA-SOUTH CREEK PRECINCT

The Wianamatta-South Creek precinct holds special significance for First Nations people and contains significant areas of high and moderate Aboriginal heritage sensitivity. The precinct includes many known Aboriginal heritage sites including artefact scatters, potential archaeological deposits and a grinding groove site. Views between the precinct and other areas also have cultural significance. The Wianamatta-South Creek precinct also partly includes two listed non-Aboriginal heritage sites – the McGarvie Smith Farm and the Fleurs Radio Telescope site. In addition, the precinct provides an important setting for many other heritage items, including Kelvin Park Homestead, located along Thompsons Creek. Furthermore, several unlisted potential heritage items and archaeological sites have been identified which warrant further investigation, retention and conservation where possible.

## BADGERYS CREEK PRECINCT

The Badgerys Creek precinct contains several known Aboriginal heritage sites including artefact scatters and potential archaeological deposits. Much of the land within the precinct has low or very low Aboriginal heritage sensitivity. However, there are some areas of moderate and high sensitivity along the creek lines (Badgerys Creek, Wianamatta-South Creek and the confluence of creeks).

One locally listed heritage item, the Fleurs Radio Telescope site, is partly within the precinct. In addition, 10 unlisted potential heritage items have been identified including several potential archaeological sites, some with extant structures and landscape elements. One of these sites is Exeter Farm, which, although demolished in the late 2000s, has significant archaeological potential and requires further investigations to determine the extent and significance of the archaeological resource, and the appropriate conservation recommendations.


















# SCENIC VALUES

## VIEWS AND VISTAS

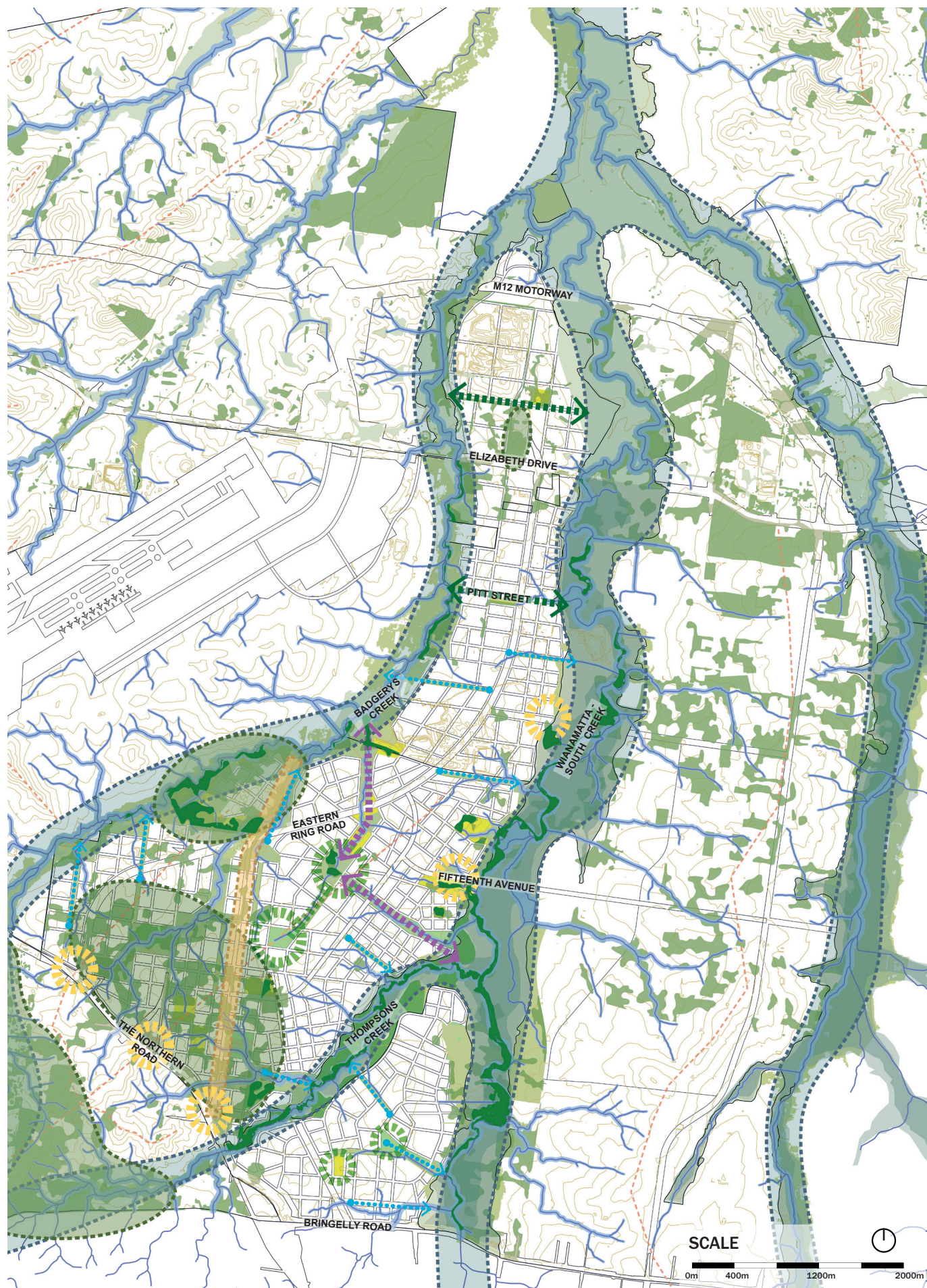
The existing character of the project area is informed by its landscape, and the urban design framework seeks to retain and enhance views and vistas of these:

- Views from ridgetops to creeks and associated vegetation. Creeks are the areas of most dense vegetation, and it is the trees which place them in the landscape. A relationship between ridge, trees, creek and sky is fundamental to the landscape character.
- Broader vegetated landscapes exist west of Badgerys Creek Road associated with ephemeral creeks. Much of this vegetation as biodiversity value. Retention of this landscape within open space will enable local place character to be retained.
- Badgerys Creek Road is a key gateway to the project area. Its existing rural character is emphasised by mature and informal verge planting, and experiencing the gentle rise and fall of the landscape. Its character will substantially change, but the function of it as a gateway can be enhanced through landscape and built form.
- To reinforce the Western Parkland City, landscape gateways on arrival at key thresholds is important.

### LEGEND

- Ridges - currently predominantly open, non vegetated
- Landform - subtly undulating
-  Filigree of creeks and dams
-  Wianamatta, Badgerys Creek and Thomsons Creek riparian corridor with associated vegetation - framing long views
-  Existing remnant vegetation - framing long views
-  Badgerys Creek Road with adjacent rural landscape setting
-  Open space on ridgetops or local high points
-  Creek to ridgetop connection through open space (visual and physical)
-  Creek to creek connection through open space
-  Views from streets towards the creeks and broader landscape (street grid oriented to terminate on a view towards creeks and ridge top)
-  ENV to be retained
-  Landscape gateway on arrival
-  Vegetation clusters







# THOMPSONS CREEK

## THE REGIONAL PARK

Parklands along Thompsons Creek offer a recreational and leisure destination in the heart of the Aerotropolis Core. At the same time, it provides a critical ecology corridor.

Cultural institutions, educational facilities, community amenities and regional indoor sporting facilities front the park.

Active recreation and major park amenities like a regional play area are located at easily accessible destination nodes.

From these points, one can set off for a walk through the grassy parklands and immerse themselves within the Wianamatta alluvial woodland.

This is a major recreation and leisure destination right in the city core with plenty to offer for future workers, residents and visitors to enjoy.

### Annotations

#### Active recreation:

1. Sportfields & associated amenities
2. Playground & associated amenities
3. Youth play
4. Indoor sport facility
5. Aquatic centre













#### Passive & non-structured recreation

6. Dogs park
7. Eco tourism
8. Park amenities, community lawn, BBQ & picnic shelters

#### Community & culture amenities:

9. Cultural & community facility
10. Schools
11. ENV to be protected

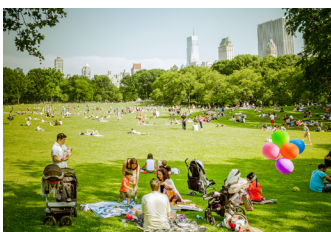
### Legend

-  Creek & associated riparian corridor
-  Low flood risk area
-  Medium flood risk area
-  High Flood risk area
-  Existing tree vegetation
-  Proposed parklands
-  Playground - regional
-  Sportfields - regional
-  Youth play - regional
-  Eco tourism
-  Active recreation, areas with recreation focus, park amenities
-  Passive & non-structured recreation
-  Recreation nodes, exercise stations, playgrounds
-  Cyclepath, walking trails

Note: These annotations are conceptual only and may be refined / reviewed as part of future design processes.



Various ways of engaging with water



Lawn with shadow



Swimming pool



Informal lunch-time sport



Major community events







# DISTRICT PARKS

Located on the ridgelines, these parks offer a place for active recreation and a subtle vantage point within the urban landscape.

From here, one can follow the journey of the water travelling from the ridgelines down to Wianamatta, Thompsons Creek and Badgerys Creek.

Although water may not always be flowing in these creeks, the trail of riparian vegetation trace the ephemeral creek beds.

The parks provide direct physical and visual connection from hilltops back to Wianamatta and Thompsons creek.

Park amenities caters mainly to the work population adjacent to these hilltop parks:

- sportfields for both worker and










larger community use,  
 – walking, running and bicycle trails, exercise nodes and  
 – picnic spots shaded by tree canopy to enjoy a lunch break in the middle of the day.

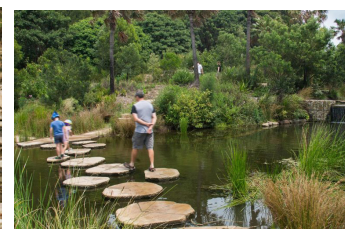
## Annotations

1. Hilltop Park
  2. Parklands along tributary (often ephemeral) creeks - pockets of passive and active recreation of local character
- Active recreation:
3. Sportfields & associated amenities
  4. Indoor sport facility
- Passive recreation:
5. Passive & non-structured recreation
- Community & culture amenities:
6. Park amenities, community lawn, BBQ & picnic shelters
  7. ENV to be protected

Note: These annotations are conceptual only and may be refined / reviewed as part of future design processes.

## Legend

-  Creek & associated riparian corridor
-  Existing tree vegetation
-  Proposed parklands
-  Sportfields - district
-  Active recreation, areas with recreation focus, park amenities
-  Passive & non-structured recreation
-  Cyclepath, walking trails
-  Recreation nodes, exercise stations, playgrounds
-  Visual connections along parklands and associated riparian corridor

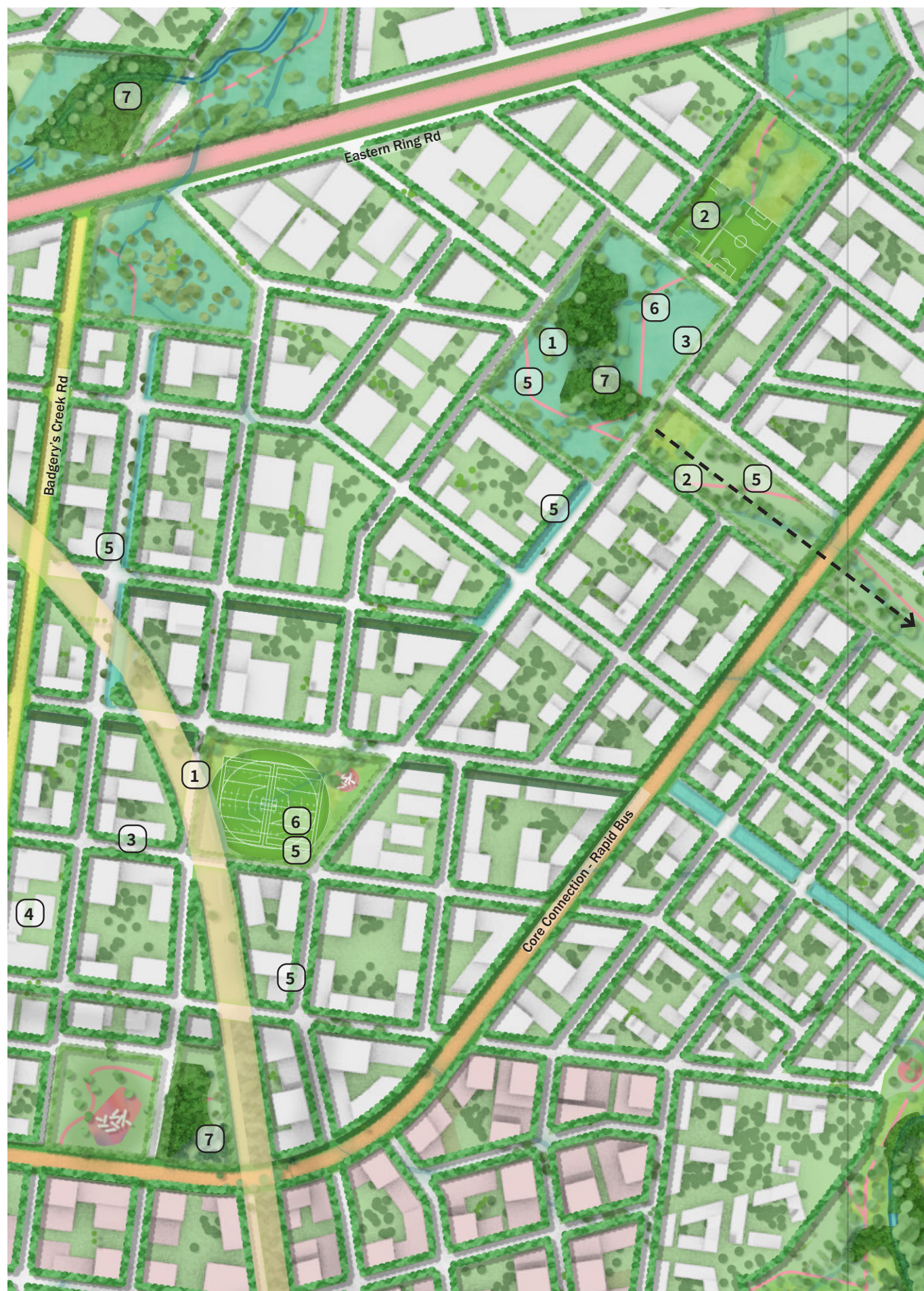


Linear parklands along tributary creeks



Hilltop parks



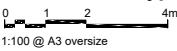




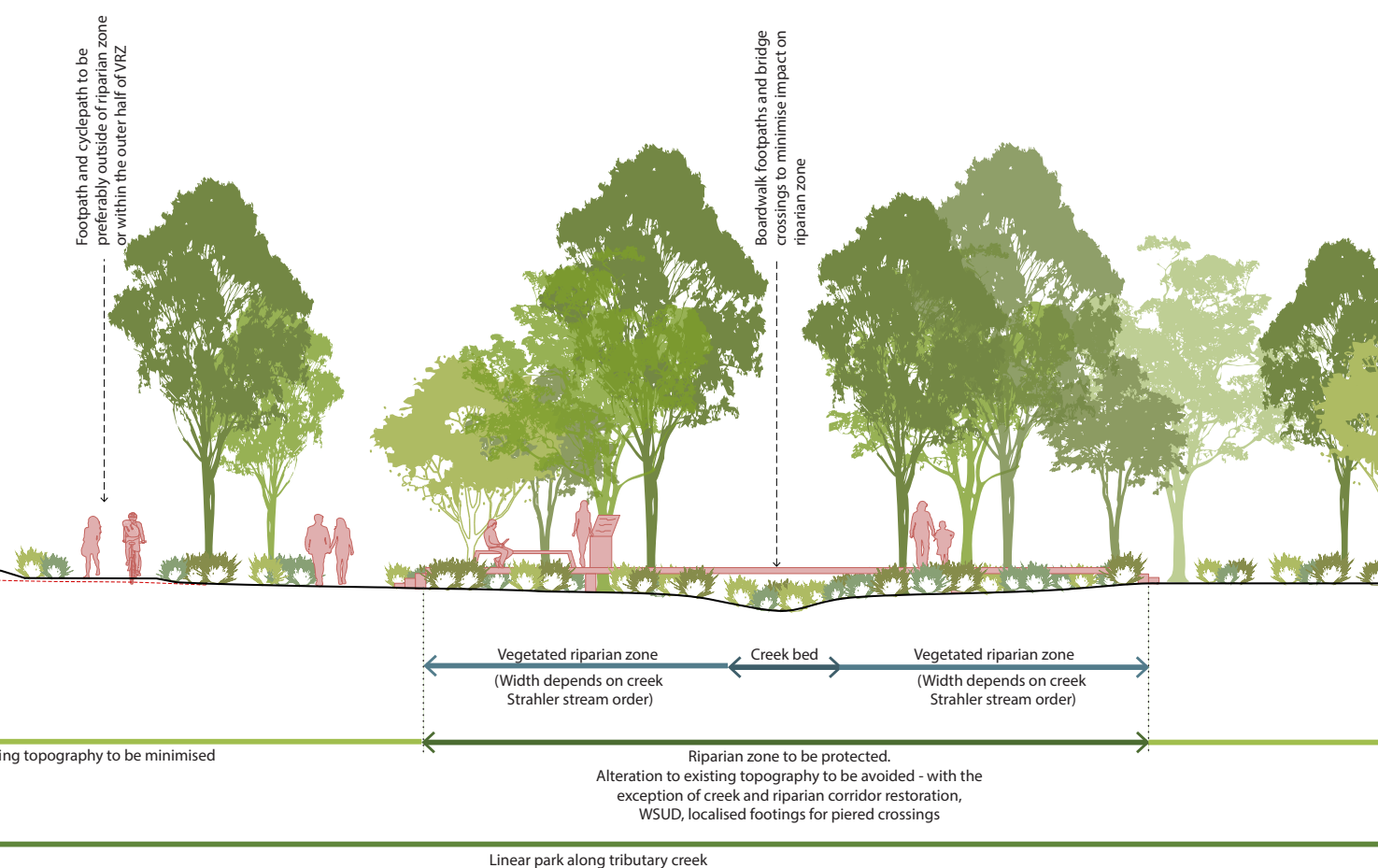
LINEAR PARK TYPICAL SECTION



Linear Park Typical Section









# LOCAL PARKS

Located within the urban fabric, these parks are the "village greens" for the local residents and workers.

The nature of their surrounds give these parks an urban character. libraries, cultural and civic institutions all front the park. There is a civic paved space for markets and community events. Cafes from nearby streets spill around the edges.

There is a kick-about space for informal play and community events. There are also playgrounds, picnic shelters and plenty of seating under the tree canopy.

Water is present both as a formalised feature and as a natural element within WSUD raingardens.

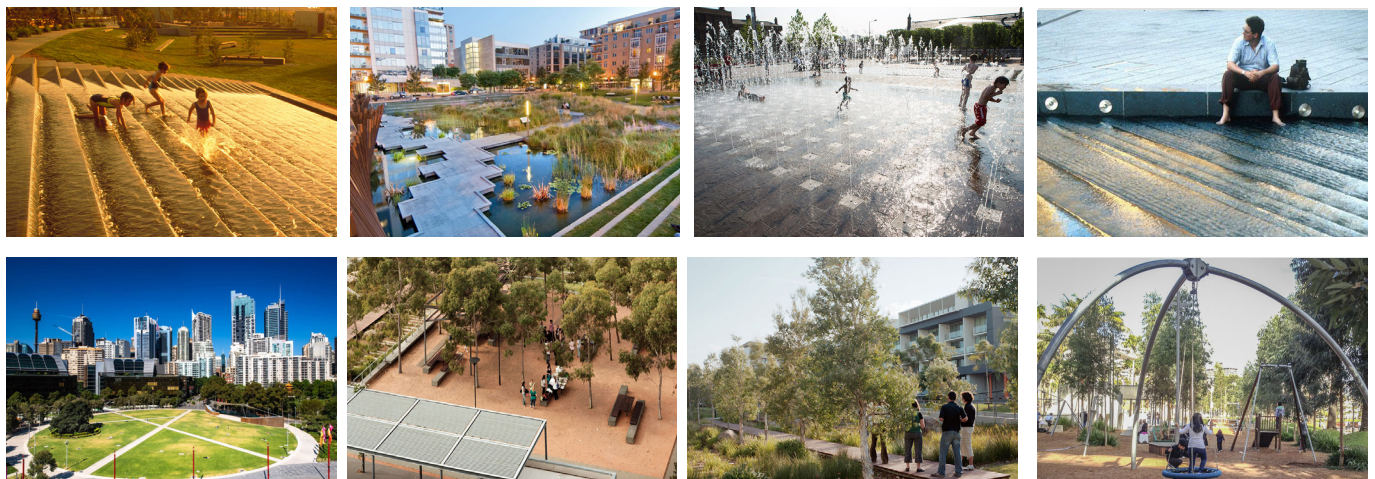
## Annotations

1. Local parks
  2. Parklands along tributary (often ephemeral) creeks - pockets of passive and active recreation
- Active recreation:
3. Sportfields & associated amenities
- Passive recreation:
4. Passive & non-structured recreation
- Community & culture amenities:
5. Village green with associated park amenities
  6. Adjacent education & community facility

## Legend

-  Sportfields - district
-  Active recreation, areas with recreation focus, park amenities
-  Passive & non-structured recreation
-  Cyclepath, walking trails
-  Recreation nodes, exercise stations, playgrounds - local
-  Creek & associated riparian corridor
-  Existing tree vegetation
-  Proposed parklands
-  Visual connections along parklands and associated riparian corridor

Note: These annotations are conceptual only and may be refined / reviewed as part of future design processes.









# ACHIEVING THE WIANAMATTA - SOUTH CREEK VISION

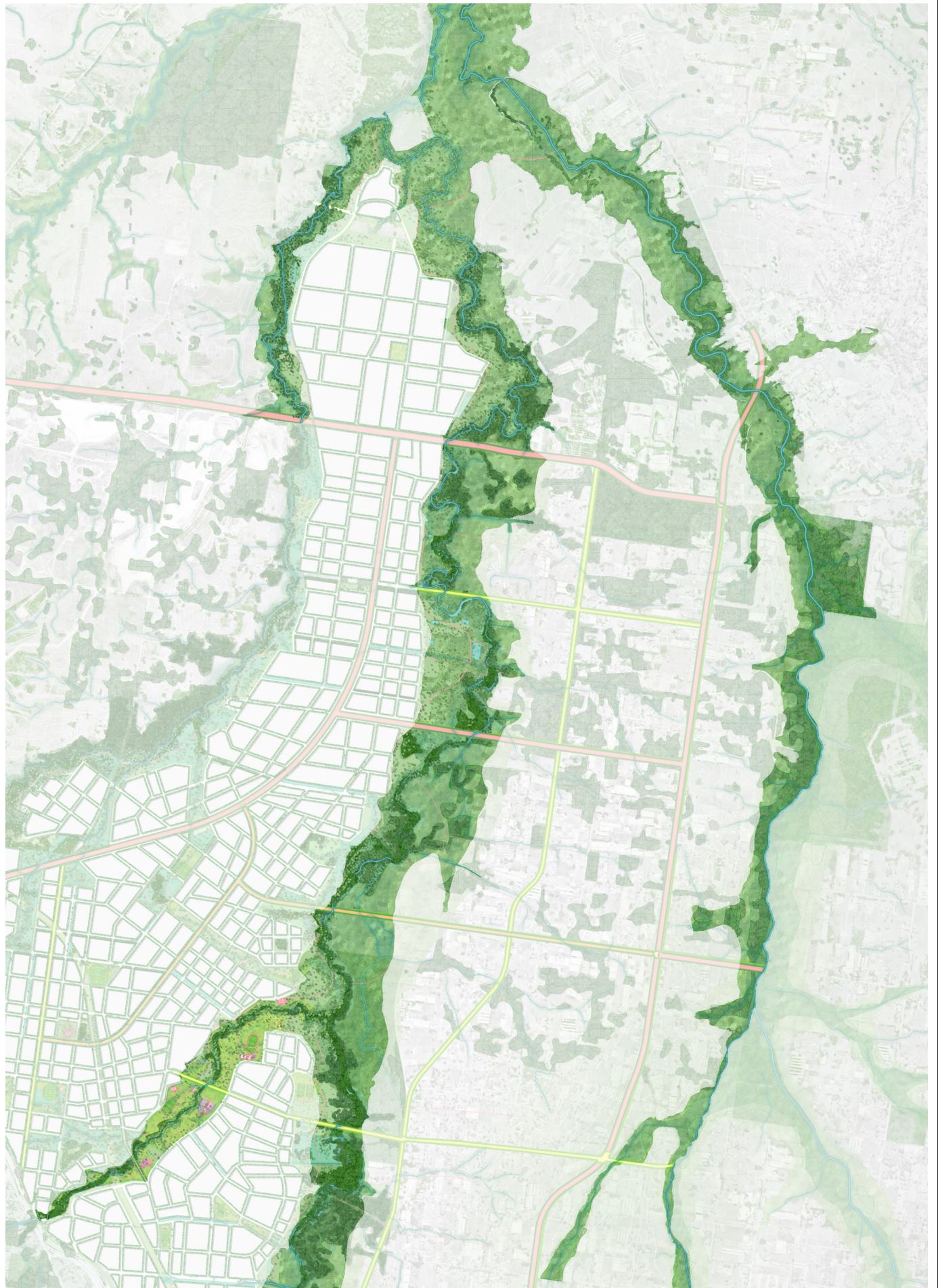
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**Wianamatta - South Creek is the heart of the Western Parkland City, a culturally rich environment providing critical landscape and ecology systems that help sustain Country. An ephemeral place, its water holes and pools provide important habitat for native wildlife. Part of the broader metropolitan water system, Wianamatta-South Creek will be an important local connector, ecological and community space.**

**The Wianamatta-South Creek Precinct is the backbone of a system of creeks, tributaries, parks, walking trails and areas of conservation as defined in the Region Plan vision. Protection of this water system, retention of significant remnant vegetation and creation of new regional parkland is critical for its health, to create spaces for the community to enjoy, and to deliver on the vision of the Western Parkland City.**

**Connectivity from Wianamatta-South Creek and its tributaries into the adjacent precincts will be landscaped to create extended green corridors. Cycle and foot paths will allow the community to enjoy the natural setting of the Wianamatta - South Creek. Framed by the urban settings of the Core and Badgerys Creek, the Wianamatta - South Creek will provide the visual, environmental and recreation amenity for the future workforce and resident populations.**







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**Wianamatta–South Creek is the longest freshwater stream in Greater Sydney and a defining element of the Western Parkland City and the Aerotropolis. Its catchment includes most of Western Sydney’s Cumberland Plain.**

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## **ENVIRONMENT AND RECREATION ZONE**

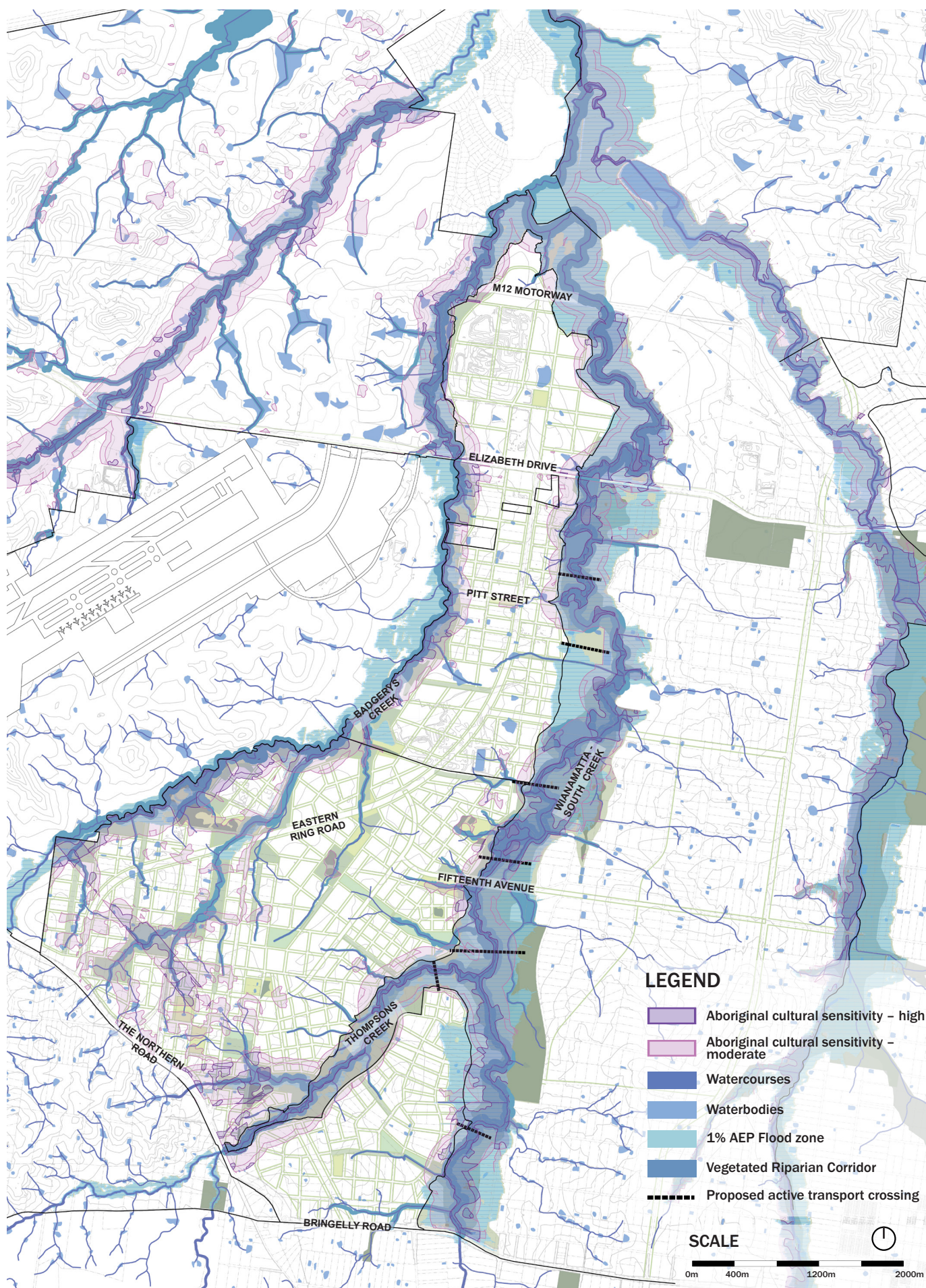
The aim for land zoned for Environment and Recreation in Wianamatta South Creek by the Western Sydney Aerotropolis SEPP is to provide for conservation, biodiversity and recreation.

## **A COOLER WESTERN SYDNEY**

Analysis undertaken by Sydney Water (Urban Typologies document) demonstrates that creeks can be up to ten degrees cooler than immediately adjacent suburban neighbourhoods. Extending the cooling benefits of the Wianamatta into the adjacent urban neighbourhoods is critical to achieving liveability over the longer term. Actions to enable this include:

- Providing public access to and across the Wianamatta Creek system so that its direct cooling benefits can be enjoyed
- Connecting parkland with existing ephemeral creeks that flow into the Wianamatta
- Complementing ephemeral creek parks with streets designed to accommodate large canopy cover and WSUD raingardens.







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## OWNERSHIP

Much of the Wianamatta system is in private ownership.

The Aerotropolis SEPP has identified specific land on Thompson Creek to be acquired for regional park and public purposes. Discussions has now begun with the affected property owners to accommodate regional open space along Thompsons Creek. This process has been managed by the Office of Strategic Lands in accordance with the process established by Property Acquisition NSW.

Transition of all other Wianamatta land from private to public ownership is outside the scope of this urban design study. The Department of Planning, Industry and Environment is embarking on a review process to recommend the best pathway for achieving the intent of the Environment and Recreation zone, and intended function of Blue Green Infrastructure within the Wianamatta South Creek corridor. This Wianamatta–South Creek Delivery Strategy will be prepared together with councils. This Strategy will investigate and confirm the delivery mechanism to achieve the precinct’s vision and strategic outcomes. This may include potential acquisition, public access easements, negotiations with landowners or public access.

## CONNECTIONS

The Wianamatta system forms a major tranche of the active transport network throughout the Aerotropolis. Here, bike and walking paths are co-located with the green and blue amenity of the creek systems. These active transport corridors are located to encourage use of the Wianamatta, as well as providing an attractive and safe route for commuting and recreating.

The overarching principles for connections throughout the Wianamatta system are:

- Active transport and recreation walking paths should be located within the Environment and Recreation Zone, but where possible, outside the high flood risk areas
- Active and walking paths will connect across creek corridors via bridges in the locations shown on the Wianamatta Plan. These provide connections at regular intervals across the creek corridor to centres, schools, recreation and active transport networks.

## CULTURE AND COUNTRY

The Wianamatta is a significant place in Indigenous Culture. Sites of significance are contained within the Environment and Recreation Zone. Those outside the Environment and Recreation Zone are connected to the Wianamatta via an interconnected open space and water system. In particular the following should be observed:

- Modified trees located outside the Environment and Recreation Zone should be visually and physically connected to the Wianamatta via open space corridors
- Significant cultural corridors should be preserved in open space and continuous links between Badgerys Creek and the Wianamatta.



### RECREATION

The Environment and Recreation Zone is planned to accommodate recreation infrastructure supporting the future local and regional populations. The approach to these recreation areas is:

- Co-locate recreation with community uses such as schools
- Focus active recreation to adjacent the mixed use zone, where resident and employment densities are highest
- Focus activities to support Thompsons Creek and adjacent land as the regional park
- Passive recreation opportunities can be located within the Environment and Recreation Zone to support enterprise employment, especially near to local centres.

For further detail, refer to the Social, Cultural and Heritage Framework later in this report.

### BIODIVERSITY AND VEGETATION

Planning Priority W14 of the Western City District Plan is to 'protect and enhance bushland and biodiversity'. The Wianamatta and associated Environment and Recreation Zone is a critical element in achieving this objective across the Western City.

Vegetation with biodiversity values has been mapped across the Environment and Recreation Zone. This vegetation is to be maintained and managed to improve its overall health and longevity.

Recreation areas and pathways should be designed to minimise disturbance to vegetation of biodiversity value.

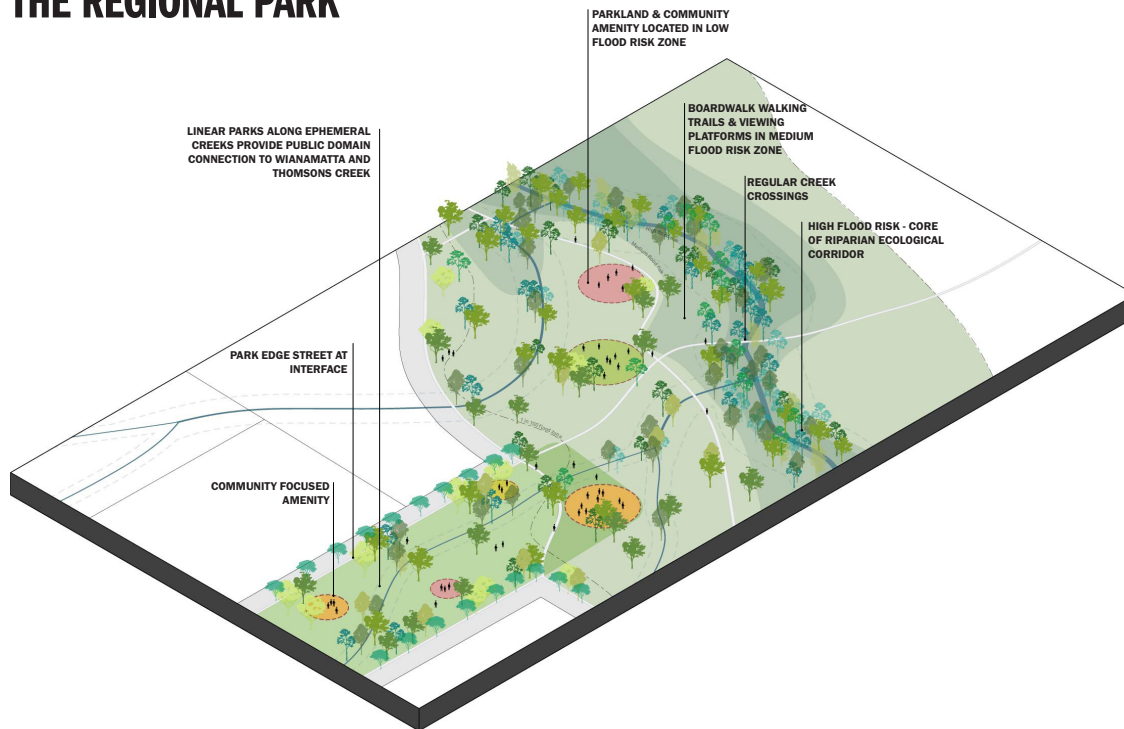
### FLOODS AND VEGETATION

The Environment and Recreation Zone performs an important storm water and flood function. In order to maintain the flood flow path and rates, a careful balance between water and new vegetation needs to be considered.

Revegetation of cleared flood prone lands has taken into consideration the effect that increased vegetation can have on flood behaviour. Revegetation of flood prone land will be undertaken where biodiversity improvements can be achieved without significantly increasing flood risk.



## WIANAMATTA - SOUTH CREEK & THOMPSONS CREEK PARKLAND - THE REGIONAL PARK



### HIGH FLOOD RISK AS DEFINED BY LIVERPOOL CITY COUNCIL:

- Core of riparian ecological corridor

The area of land subject to flooding during the 1% Annual Exceedance Probability (AEP) flood and subject to high hydraulic hazards. The High Flood Risk Zone is often aligned with the floodway corridor.

### MEDIUM FLOOD RISK AS DEFINED BY LIVERPOOL CITY COUNCIL:

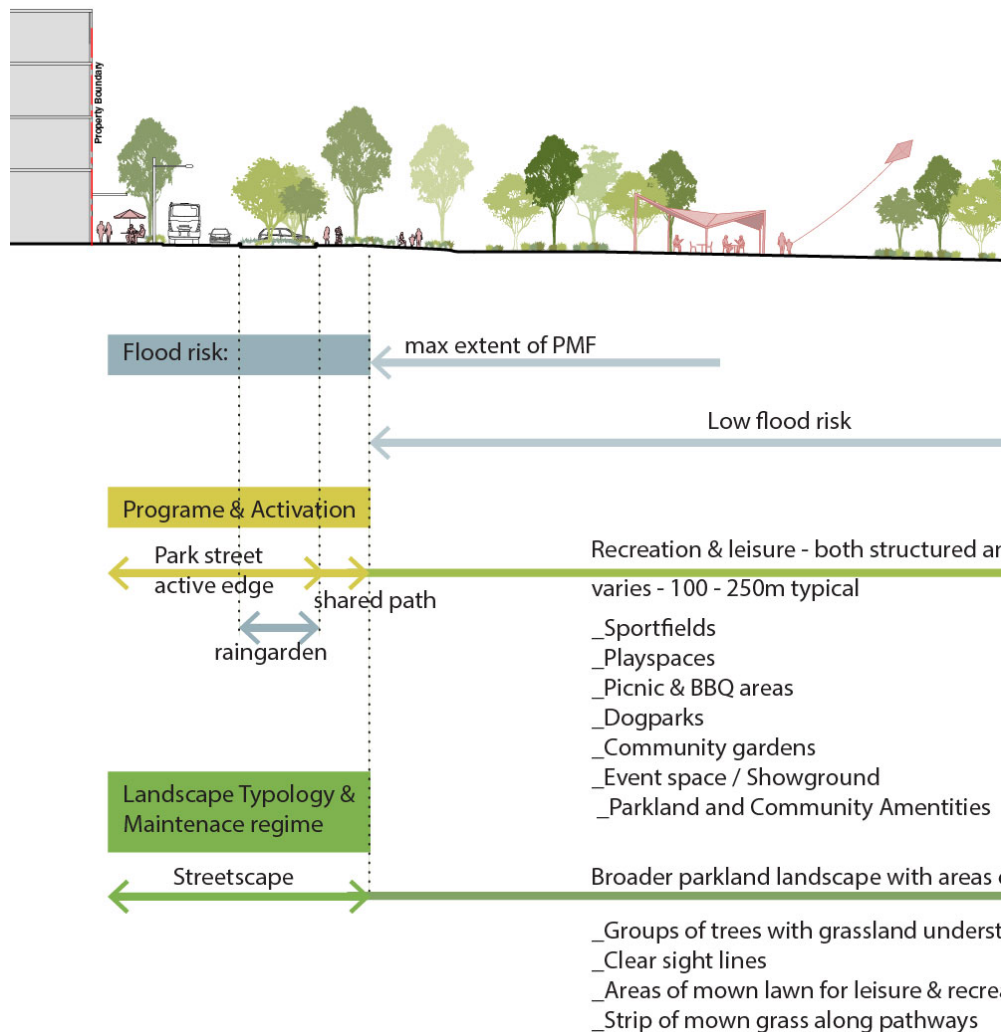
- Low impact recreation - boardwalk walking trails & viewing

The residual area of land subject to flooding during the 1% Annual Exceedance Probability (AEP) flood outside of the High Flood Risk Zone.

### LOW FLOOD RISK AS DEFINED BY LIVERPOOL CITY COUNCIL:

- Sportfields, playspace, parkland & community amenities

Area of land outside of the predicted 1% Annual Exceedance Probability (AEP) flood extent but within the Probable Maximum Flood (PMF) extent.





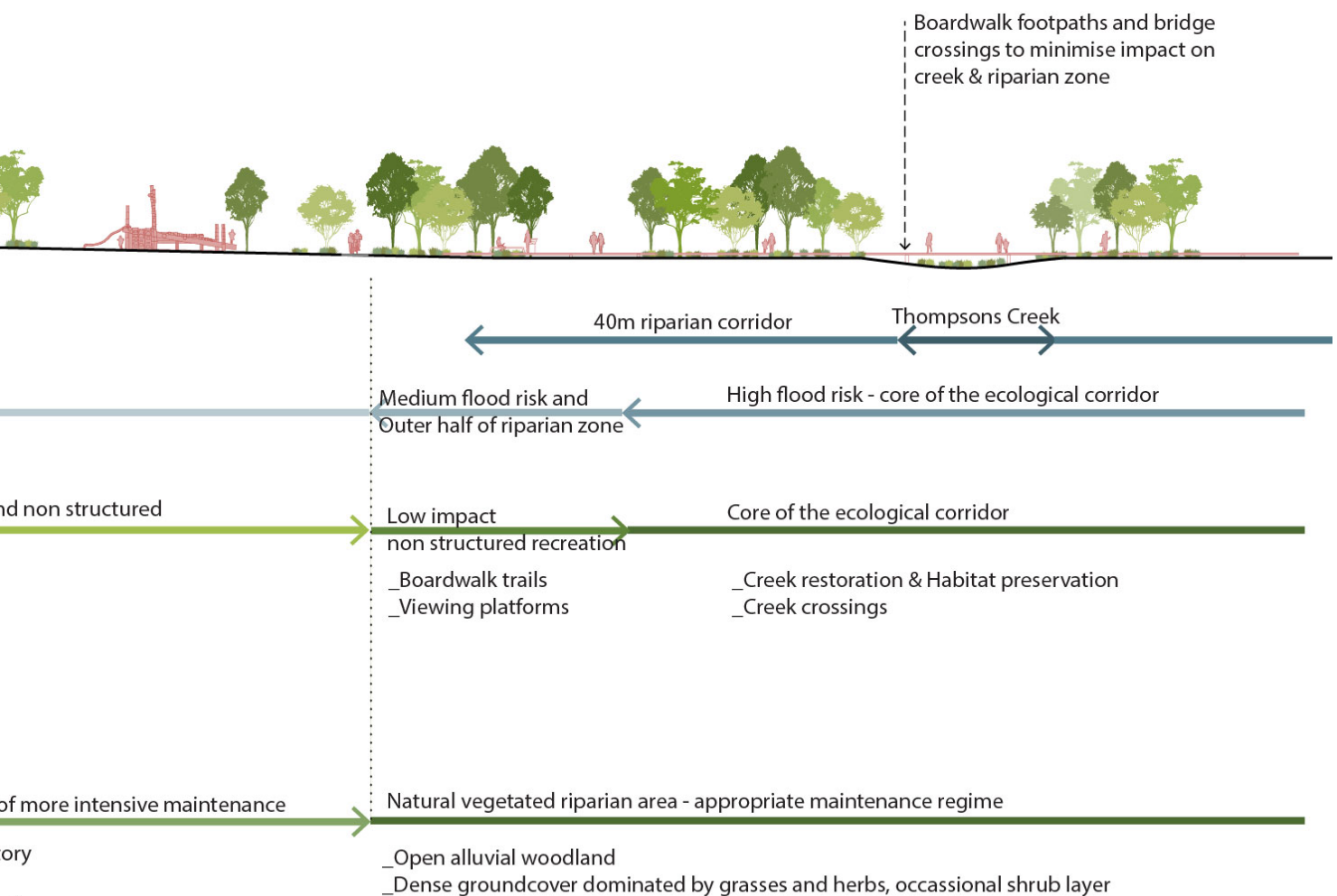
The Thompsons Creek section (below) has been developed on the basis of Liverpool City Council Flood Risk categories and the GIS 1%AEP and PMF mapping.

In this particular instance, the “High flood risk” as mapped does not have the same extent as the 40m Riparian corridor.

Office of Water Guidelines have been used to direct the location of any active transport infrastructure (shared path, cycling path, lookouts) to the outer half of the riparian corridor and outside of the high flood risk zone, unless required for crossing over the creek. These paths would be elevated “boardwalk structures” on piers to reduce impact on the riparian corridor.

In this particular case, the Thompsons Creek acquisition has been zoned for Environment and Recreation, including the PMF – hence the section below shows PMF extending to the edge of Park Edge street.

Through consultation with the Technical Working Groups, the following strategy was developed: Park infrastructure, amenities and sportfields within the low flood risk, low impact recreation such as walking path and trails within the medium flood risk zone and environmental – habitat corridor in the high flood risk.





# A RESPONSE TO SUSTAINABILITY AND RESILIENCY

With Dr Frank Thomalla, Climate and Disaster Risk Research and Consulting

The Aerotropolis urban design process aims to address resilience and sustainability principles as much as possible by applying the United Nations 'Ten Essentials for Making Cities Resilient' (UNISDR, 2012). Below we describe which of the ten essentials have been considered in the plan, and how.

To organise for resilience (Essential 1), the project applied a collaborative, design-led approach that aimed to enable the rapid integration of analysis and ideas of stakeholders as the basis for decision-making.

Led by a multi-disciplinary and multi-perspective team consisting of urban designers, planners, landscape architects and architects, as well as a specialist team of experts in Indigenous design, sustainability, circular economy, and climate and disaster resilience, this enquiry by design process engaged a range of stakeholders through a series of consultative workshops that enabled their input and feedback to be incorporated in the plan design.

Stakeholders included the key government agencies (e.g., water, transport) and planning partnership authorities. The ongoing Covid-19 pandemic caused complexities in managing stakeholder interaction.

Identifying, understanding and applying risk scenarios (Essential 2) has been an important component of the WSA urban design. Key risks identified by stakeholders are floods, bushfires, and extreme heat. An assessment of the 1% AEP flood extent has been conducted by Liverpool City Council and Penrith City Council (reference?). Mapping of the areas exposed to flooding has informed decisions on the siting of buildings. In some areas, the precinct boundary has been expanded to ensure there is sufficient flood capacity and useable open spaces.

An Environment and Recreation Zone was created which contains the 1% AEP flood extent of the Wianamatta South Creek corridor. As the precinct is prone to bushfires, an analysis of bushfire risks has been conducted. This has influenced planning for road corridors, setbacks, and emergency vehicle access. Urban heat has also been a key consideration in the planning process.

The Sustainability and Heat study for the WSA (reference) found that adoption of a sustainable regenerative scenario would lead to: A greener more resilient Western Sydney area with up to 7oC of cooling on extreme heat days provided by better design, greening and irrigation, and a reduction in extreme and very strong heat stress days per summer from 47 to 19 days.

The urban design process applies a range of approaches to pursue resilient urban development (Essential 4) and represents a beyond Business As Usual (BAU) approach.

The frameworks have been driven by a water sensitive urban design approach. Applying integrated water management, the plan proposes water sensitive buildings and public domains so as to protect the integrity and health of the Wianamatta-South Creek catchment, which is characterised by ephemeral creeks and water systems. Other pathways for sustainable and resilient urban development proposed in the planning process include low carbon communities that reduce emissions by generating renewable energy, a circular economy through new systems, services and behaviours in households, businesses and public spaces, and cool suburbs that reduce urban heat in a changing climate and enhance human health and comfort through green infrastructure and strong connectivity.



Measures to manage stormwater, decrease urban water runoff, enhance urban comfort, reduce heat stress, and improve liveability and sustainability include tree planting, green street infrastructure, permeable surfaces across neighbourhoods, and landscape areas as part of road planning. Resilient urban development of the WSA is anchored in a number of existing policies and plans:

- Better Placed - Government Architect New South Wales
- Greener Places - Government Architect New South Wales
- Draft Greener Places Design Guide - Government Architect New South Wales
- Better Placed; Aligning Movement and Place - Government Architect New South Wales
- Greater Sydney Outdoors Study - NSW Department of Planning and Environment
- Five Million Trees for Greater Sydney - NSW Department of Planning and Environment

The vision for the WSA is a landscape-led approach to urban design and planning which aims to achieve environmental sustainability, resilience and adaptability. At its centre is the preservation of the network of blue and green systems including waterways, riparian areas, bushland, parks and open spaces, tree canopy (including street trees) and private gardens. Critical to achieving this vision of safeguarding natural buffers and protective functions of ecosystems (Essential 5) is starting with Country.

Taking an Indigenous and heritage lens has been useful in establishing principles for creating and enhancing contiguous, regionally significant open space corridors that connect ridge tops, creeks and conserves, restores and extends environmentally significant vegetation. These corridors provide ecological protection and enhancement, stormwater treatment and regional recreational opportunities. The Wianamatta–South Creek and Kemps Creek north-south blue-green corridors are complemented with east-west parks,

riparian avenues and well canopied boulevard that provide a connection to the existing Western Sydney Parklands. Preserving ephemeral creeks and existing contours and flow paths maintains the hydrology and functioning of ecosystems (creeks and water bodies) and creates adequate buffers to retain water in the landscape. Biodiversity mapping (reference) and a land capability assessment (reference) that investigated soil salinity and salinity management options have influenced the shape of the plan and were used as a basis for incorporating protected areas, nature reserves and national parks, regional parklands, creeks, rivers, lakes and reservoirs.

The conservation and enhancement of biodiversity is mandated by the Greater Sydney Region Plan. The Draft Cumberland Plain Conservation Plan aims to protect threatened plants and animals in Western Sydney while supporting the delivery of housing, infrastructure, open and green spaces.

Key elements of the urban design process aimed at understanding and strengthening societal capacity for resilience (Essential 7) for the WSA include a collaborative approach to planning and delivery, connecting infrastructure, and liveability. The collaborative approach started with cultural mapping of Indigenous and non-Indigenous heritage and a process of understanding the population types that will be living and working in the area and the needs for supporting infrastructure such as libraries and schools (GHD 2020).

Designing with Country ensured that urban development respects landforms, and responds to all aspects of Country including land, water, and sky. Cultural heritage and education are known to play an important role in building resilience by creating social connectedness, which promotes a culture of mutual help in times of crisis. Streets and neighbourhoods of the WSA have been designed to maximise connectivity and amenity.

Infrastructure links the WSA with the Western Parkland City and the greater Sydney metropolitan region. A connected and permeable urban structure provides quick and easy access to good public transport and quality open spaces from residential areas and work places via comfortable and attractive walking and cycling routes. Liveability targets included diverse, affordable and well-located housing (30-minute city) and the provision of social and cultural infrastructure including affordable rental housing. Residential neighbourhoods have been designed to include centres with specific identities that provide focal points for social activities, are walkable, and are located within a 400m walk of open space. The plan's social infrastructure framework proposes a series of open space types that can be utilised for events, conferencing, education, tourism and recreation, sports, and art.

The urban design process included considerations of how critical infrastructure systems should be designed for resilience (Essential 8). Critical roads identified are the Northern Road in the south of the precinct, Elizabeth Drive in the north, and the Eastern Ring Road. These road corridors provide regional movement function and are designed to be located outside areas exposed to the 1% AEP year flood extent and above the 1% AEP year flood level. The road routes have been chosen to provide more than one escape route from any one area within the WSA in case of an evacuation.



# **TRANSPORT INFRASTRUCTURE FRAMEWORK**

**Movement is fundamental to the economy of the Aerotropolis and facilitating its intended jobs growth. An integrated network across all mode types is to be provided, with a focus on sustainable transport options.**





Perspective render of the Aerotropolis Core station, showing city scale development and a public plaza. Image courtesy Sydney Metro.



# MOVEMENT AND PLACE

By AECOM

The objective of Movement and Place is to achieve roads and streets that:

- Contribute to the network of public space within a location, where people can live healthy, productive lives, meet each other, interact, and go about their daily activities.
- Are enhanced by transport and have the appropriate space allocation to move people and goods safely and efficiently and connect places together. Balancing movement and place recognises that trade-offs may be required to achieve a best fit for the objectives

Classification into four street environments, as identified by the GANSW Movement and Place Strategy, provides an understanding of the function and form of a road corridor, where movement and place interact.

An assessment and definition of the roads and streets within the precincts have been undertaken using the Movement and Place framework, based on the proposed transport plan and land use plan for the Aerotropolis Core, Northern Gateway and Agribusiness precincts.

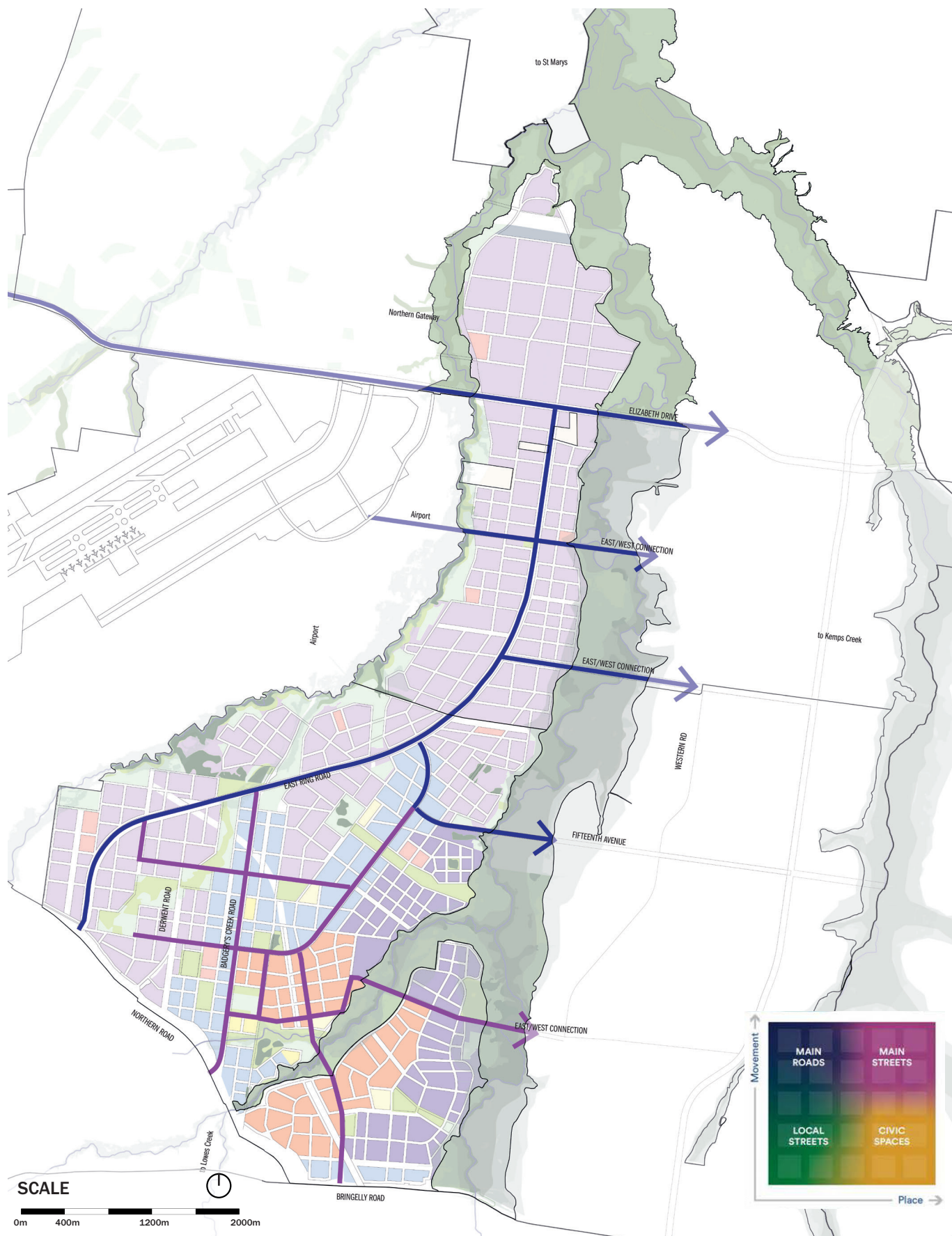
The Government Architect's Practitioner's Guide to Movement and Place has been utilised for this assessment.

For this stage of the project, an initial classification of the roads and streets within the precincts has been undertaken. This is likely to evolve as key issues and opportunities present for further investigation during the subsequent master planning stages or in the preparation and assessment of detailed development proposals.

The assessment focused on the classification of the Main Roads and Main Streets and Local Streets within Western Sydney Aerotropolis. Motorways sit within Main Roads, however as they do not have activated land use adjacent to them, they have been denoted by grey lines for the purpose of this analysis. In addition, Local Streets are not highlighted on the maps as these make up all the streets not otherwise marked.

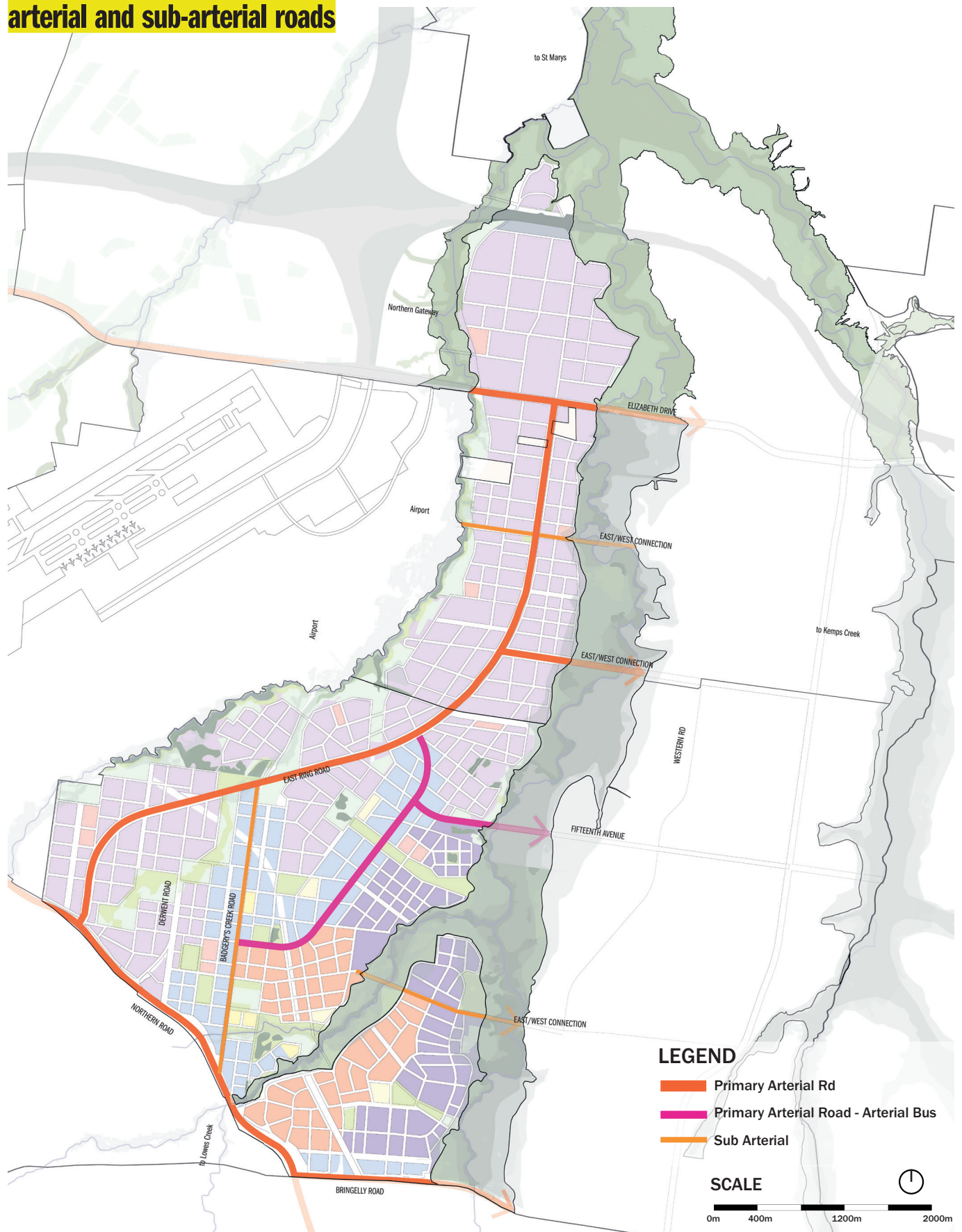
- Civic Spaces have not been defined as detailed master planning of centres is not yet known.
- Local Streets provide for local access both outside of centres and within centres.
- Main Streets traverse through areas with greater land use intensity, at the core of the centres.
- Main Roads provide for the strategic sub-regional, regional or metropolitan movement of people and freight within, and between, the precincts, and major land uses. These are formed of 40-metre-wide sub-arterial roads, 60-metre-wide arterial roads and motorways.





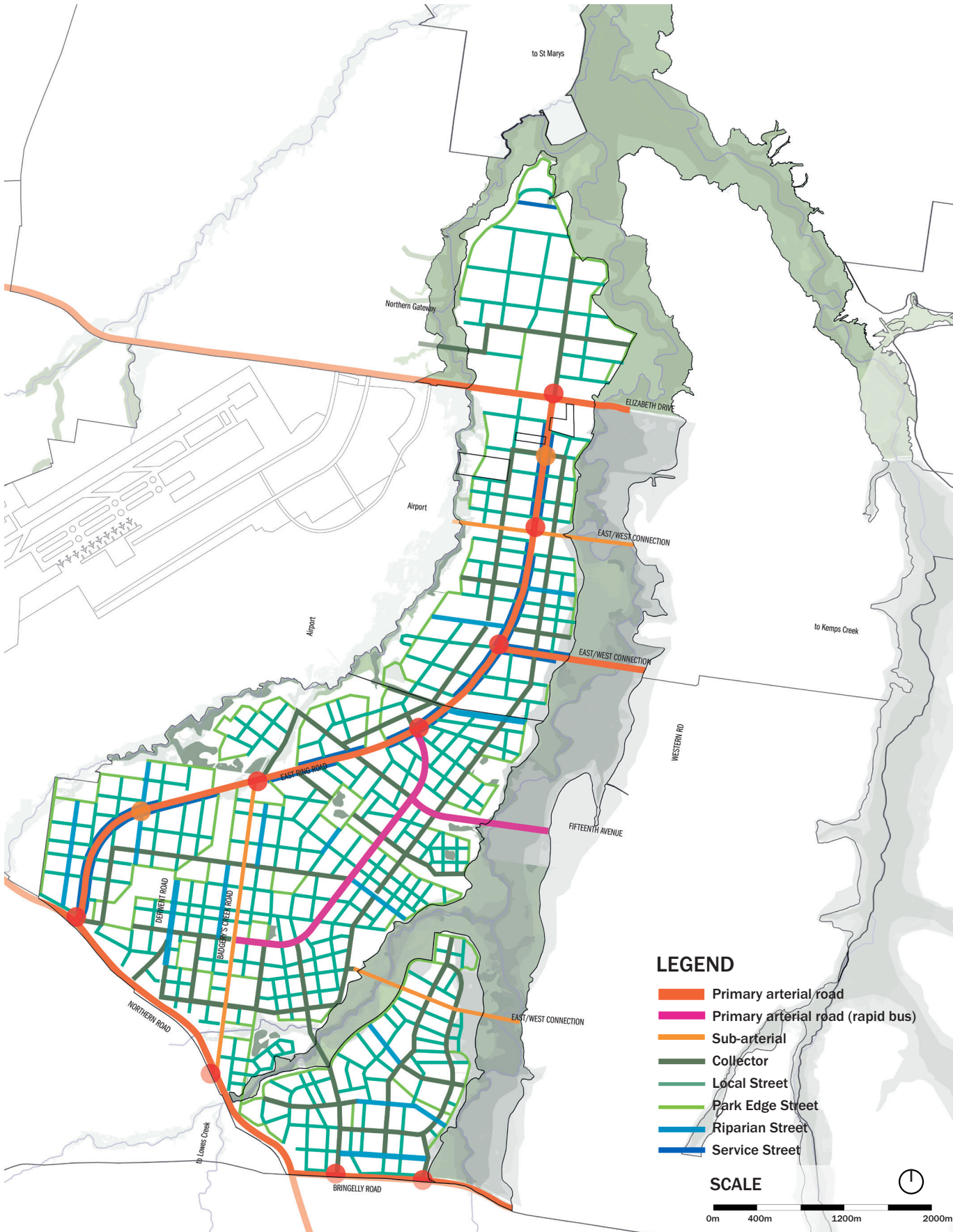


## Transport strategy plan - major arterial and sub-arterial roads



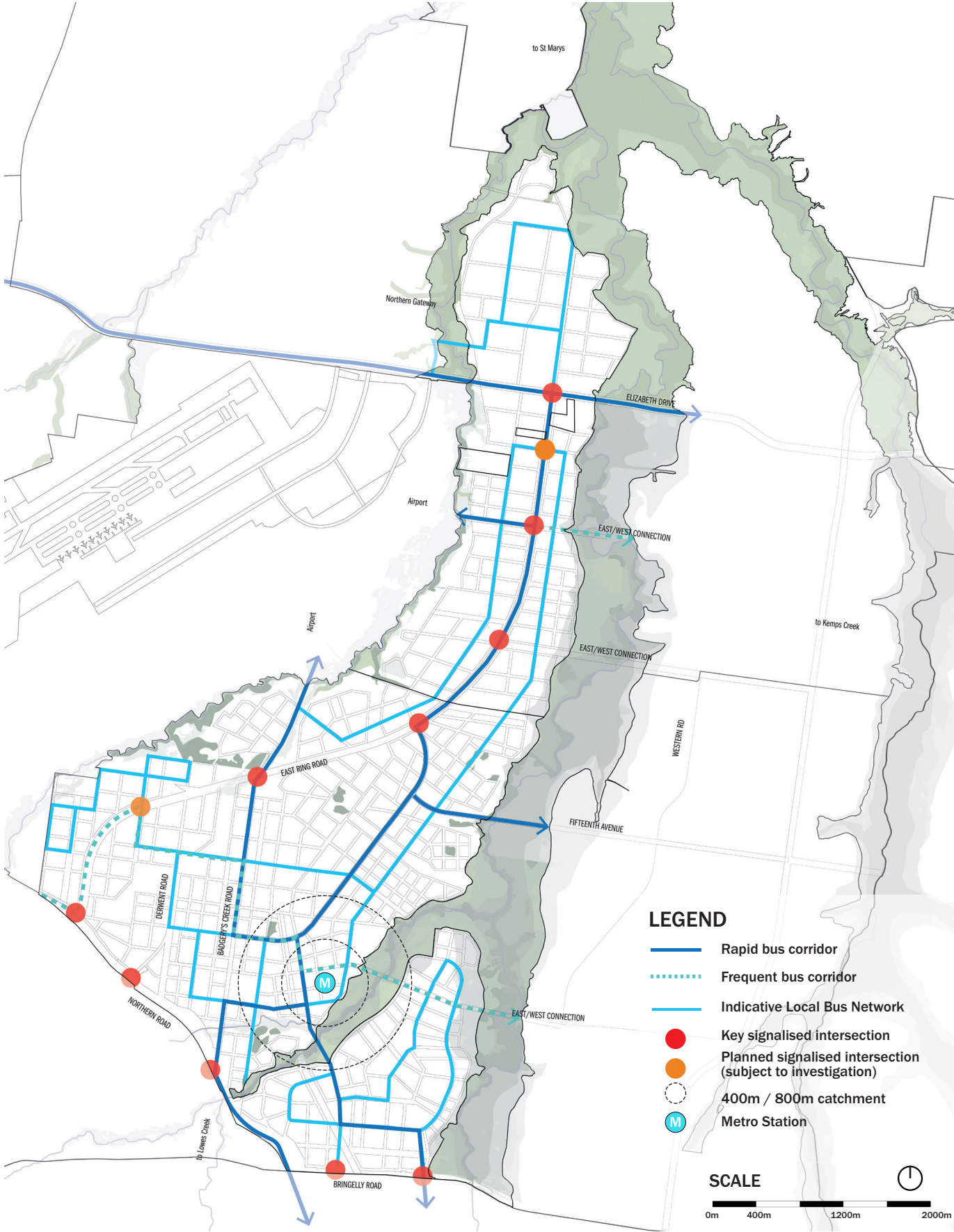


## Street Typologies



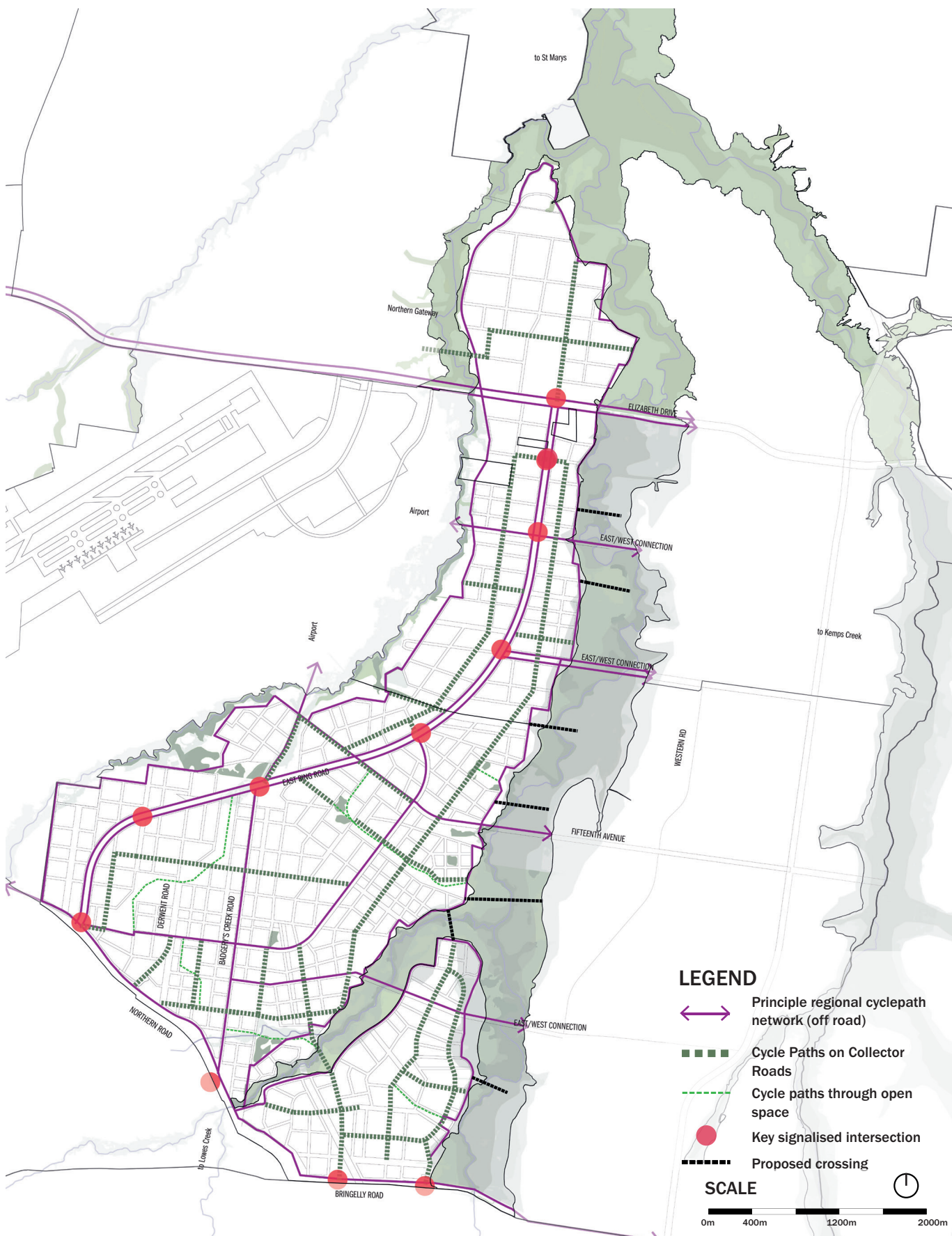


Principal Public Transport network





## Principal Active Transport network





# LAND USE AND URBAN FORM

**Land use across precincts will capitalise on the opportunities provided by the airport and Wianamatta - South Creek. An integrated parkland city will emerge, with a focus on employment and mixed use activity.**







# PRECINCT LAND USES

## SUPPORTING JOBS AND A MIXED USE CENTRE

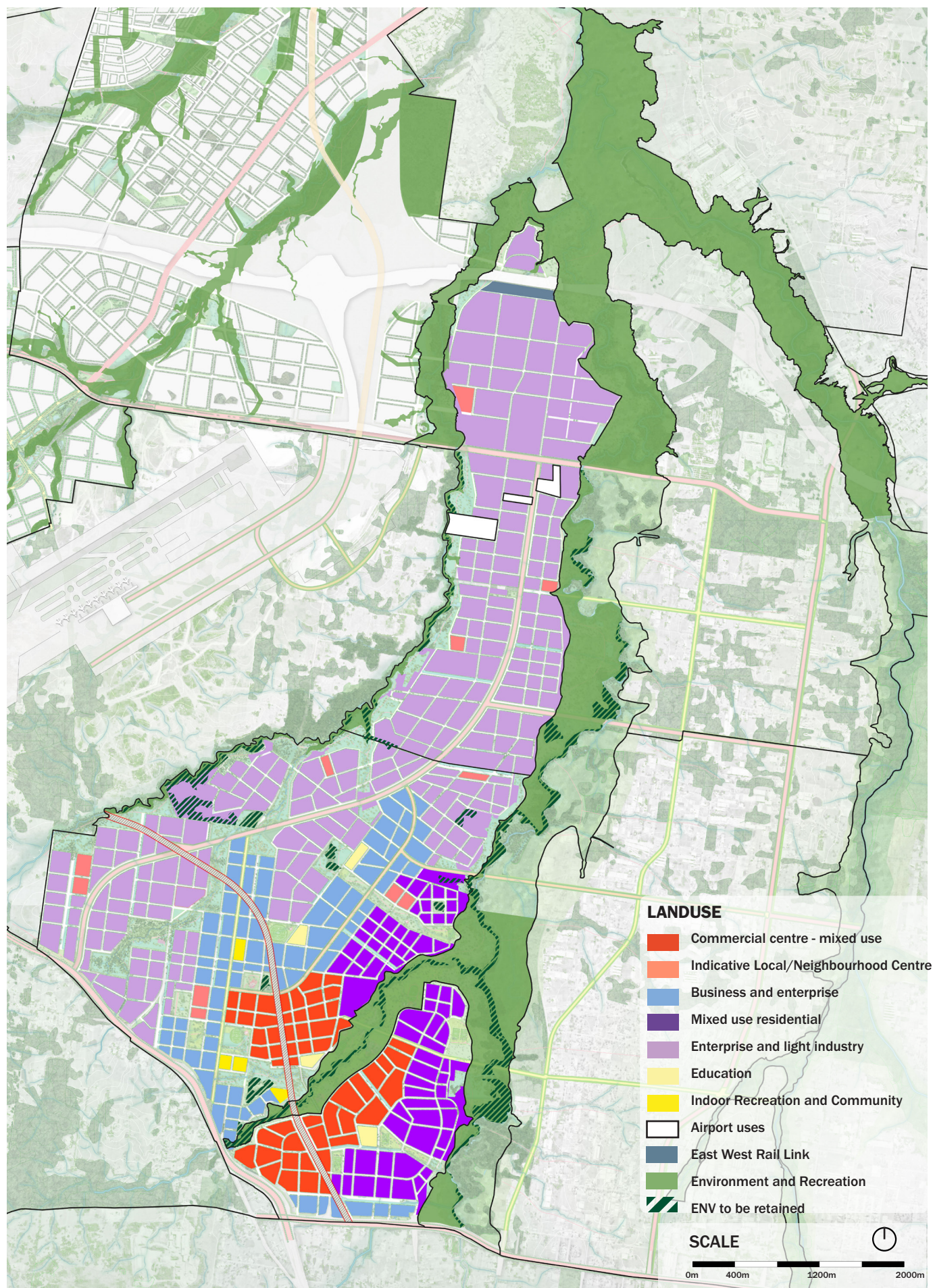
The Aerotropolis Core and Badgerys Creek precincts collectively will support up to 71,000 jobs by 2056. In addition, the mixed use zone of the Western Sydney Aerotropolis Plan also plans for up to 24,000 residents.

The land use plan has been derived based on these targets and to also support an urban form that provides legibility, amenity and functionality.

- A mixed use centre focused around the Metro station, Thompsons Creek regional park, and a potential future station associated with future rail links
- Badgerys Creek Road and Fifteenth Avenue are key arrival corridors to the Aerotropolis Core; land uses adjacent have been identified for Business and Enterprise in order to enable urban boulevards to eventuate
- Mixed use residential is provided within the Mixed Use zone of the WSAP, allowing for flexibility in applying residential and commercial land use functions - achieving a mixed use outcome at a neighbourhood, rather than a building scale
- The Kelvin Park Homestead is currently used for private residential purposes and is a State Heritage item. It would be appropriate for this and surrounding land to be used for a public use such as tertiary education (TAFE / university) or similar community uses, however it has been identified for Residential Mixed Use to provide for flexibility in land use outcomes
- Enterprise and Light Industry are applied to provide flexibility for low density industrial uses to be developed initially, and that land to transition over time for more dense employment outcomes
- Indicative employment zone centres are provided throughout the Enterprise and Light Industry areas to support worker amenity; these locations are indicative and may be re-accommodated subject to further detailed justification
- Education uses are provided within the mixed use zone to allow for school provision. Schools need to be appropriately distributed to account for catchments, located adjacent to open space and near public transport. Two primary schools, and two high schools (one being a special purposes high school) are required within the Aerotropolis Core. The high schools are purposefully located adjacent to the district open spaces.

- Special uses for community infrastructure have been identified throughout the Core to support the mixed land uses, and contain important social infrastructure such as aquatic and indoor sports, libraries, community centres and tertiary education' change to 'Special uses for community infrastructure have been indicatively identified throughout the Aerotropolis Core to support the mixed land uses, and contain important social infrastructure such as aquatic and indoor sports, libraries, community centres and tertiary education.
- Open space is provided to be networked, multifunctional and consistent with the Blue-Green grid
- Land uses within the Public Safety area need to be limited to ensure low densities of on site populations







# MAJOR INFRASTRUCTURE CORRIDORS

## SYDNEY METRO AND TRANSPORT CORRIDORS

The State Environmental Planning Policy (Major Infrastructure Corridors) 2020 (Major Infrastructure Corridors SEPP) establishes Major Infrastructure Corridors and protects land for three future infrastructure corridors that will be critical in supporting the passenger and freight network for a growing Western Sydney. This:

- identifies infrastructure corridors to be protected and the land that is affected
- reserves land within these corridors for infrastructure purposes through the rezoning of land, and identifies it as a future infrastructure corridor
- changes the planning controls that apply to land within the corridors, including identifying development that will be permissible within the corridor
- details the types of development applications that will be referred to Transport for NSW for their concurrence on and around a future infrastructure corridor
- prohibits further subdivision of land within corridors
- maintains the structural integrity of the land for future infrastructure by requiring additional consideration for certain excavation works on adjacent land
- guides development on land surrounding the corridors.

## PROTECTING CORRIDORS

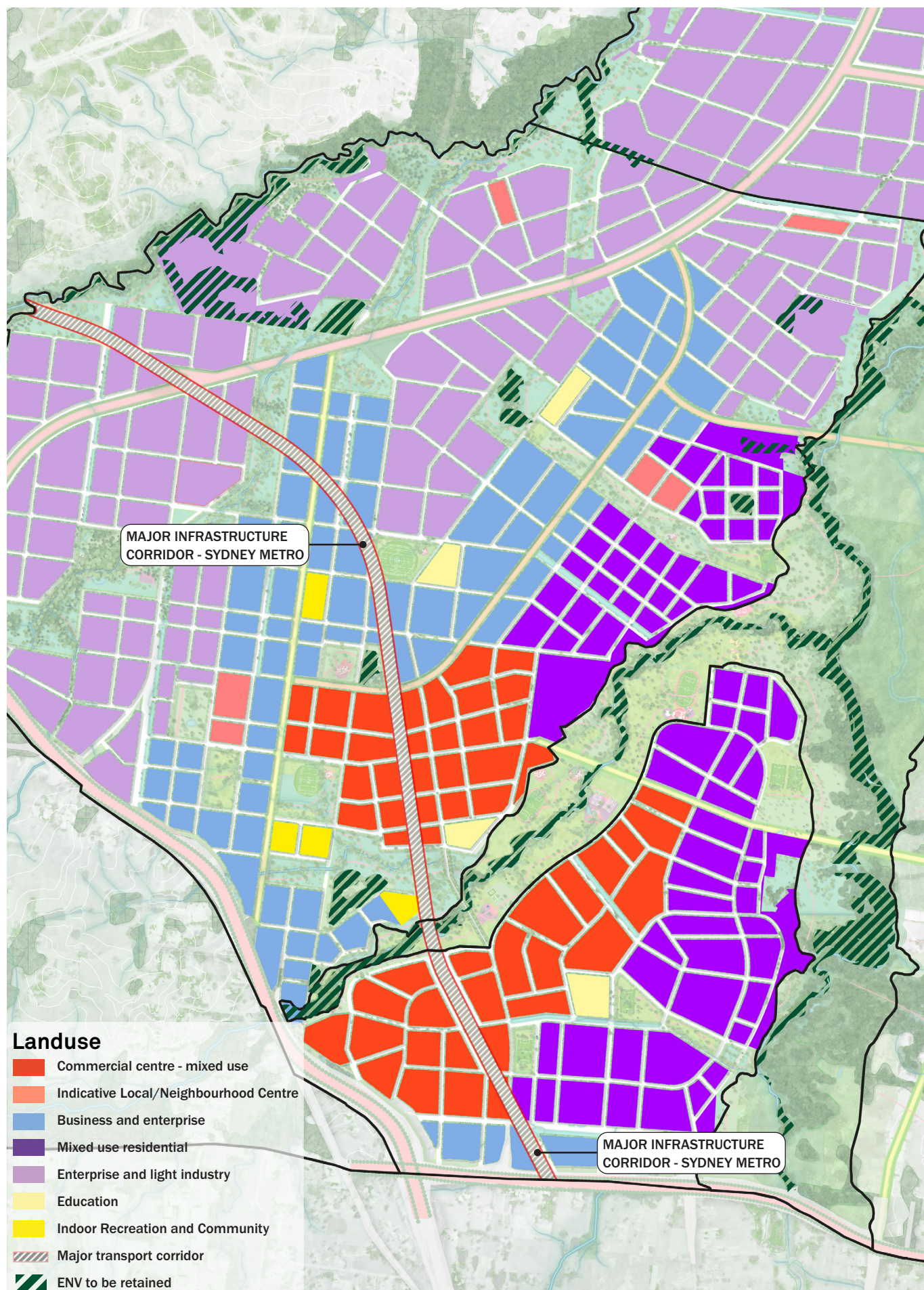
Future corridors are protected from certain types of development or encroachment by sensitive uses until their intended use can be realised.

This means that new development cannot compromise the ability to deliver the infrastructure within the protected corridor in the future.

In the case of the Sydney Metro corridors transversing the Aerotropolis Core and Northern Gateway precincts, development will not occur on the affected land. The land will remain as open landscaped area that is maintained by the landowner until the railway corridor is established. Certain building works adjacent to and within 25 metres of the rail corridor will not be approved without the concurrence from Transport for NSW.

The Aerotropolis SEPP expands on the protected Major Infrastructure Corridors by requiring consideration of key components of the transport network in the Aerotropolis, including the Eastern Ring Road and Fifteenth Avenue.







# BUILT FORM

## AEROTROPOLIS CORE PRECINCT PRINCIPLES

1. Height is greatest within the Mixed Use Centre, where the Sydney Metro Station and Thompsons Creek Regional Park offer amenity and connectivity benefits.
2. Buildings are designed to address streets and open space.
3. Badgerys Creek Road and the Core-Fifteenth Avenue connection are critical boulevards, where buildings must frame a consistent street edge, enabling activation and public transit use.
4. Buildings are designed consistent with passive cooling principles, maximising the potential for cross ventilation and minimising solar heat gain.
5. Building type and scale responds to its intended use.
6. Buildings and associated construction methodologies are designed to maintain adequate clearance for air navigational activity over and around the Aerotropolis.
7. Within identified centres, buildings present to adjacent roads and open space to create people focused and place based outcomes.
8. Within the Mixed Use Zone:
  - a consistent street wall at a human scale (2 to 6 storeys) should be provided to street frontages.
  - Breaks in the street wall may occur for laneways, courtyards or associated landscape elements that allow permeability targets to be met. These should be limited in width to enable street activation.
  - Taller built form is permitted up to the OLS limits, but should be separated to allow a dispersal of towers.
  - Towers may come to ground, without podium setbacks, where wind and microclimate impacts are mediated.
  - Buildings will be of high quality
9. Within the Enterprise Zone:
  - Notwithstanding the larger format of building footprints, buildings should address streets through clarity of entries, articulation and siting of form, levels consistent with the primary street address
  - Level differences between buildings and any adjacent parkland / street should be minimised
  - Industrial and enterprise architecture will be of high quality







Perspective aerial render of the Aerotropolis Core.



## BADGERYS CREEK PRECINCT PRINCIPLES

1. Height and scale of buildings responds to the intended function and typology.
2. Buildings are designed to address streets and open space.
3. Buildings present to arterial roads or associated service roads through clean built form and minimal visual clutter.
4. Buildings are designed consistent with passive cooling principles, maximising the potential for cross ventilation and minimising solar heat gain.
5. Buildings and associated construction methodologies are designed to maintain adequate clearance for air navigational activity over and around the Aerotropolis.
6. Site design enables setbacks to road edges for landscaping and water permeability to the soil.
7. Within identified centres, buildings present to adjacent roads and open space to create people focused and place based outcomes.

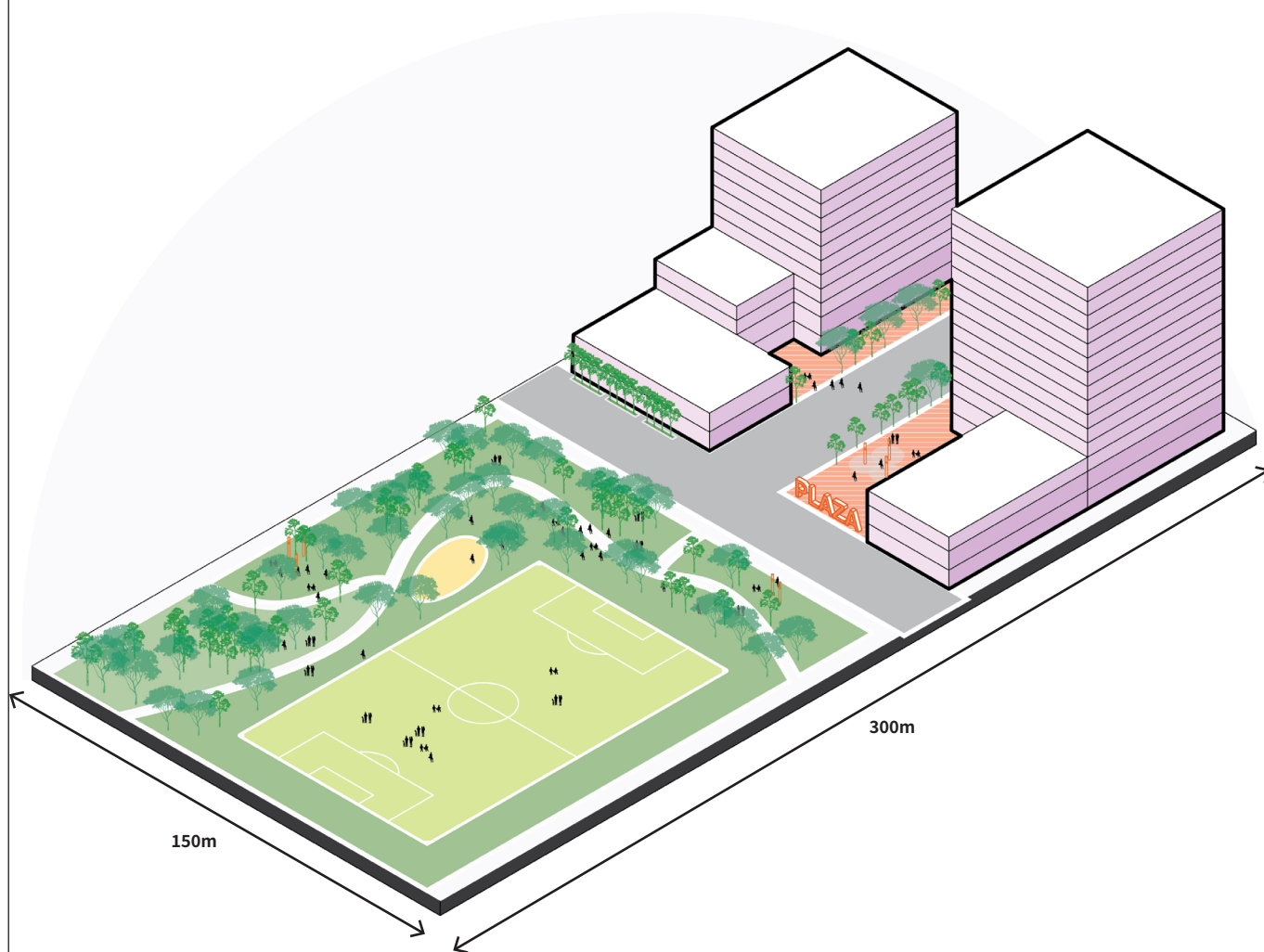






Perspective aerial render of Badgerys Creek precinct.





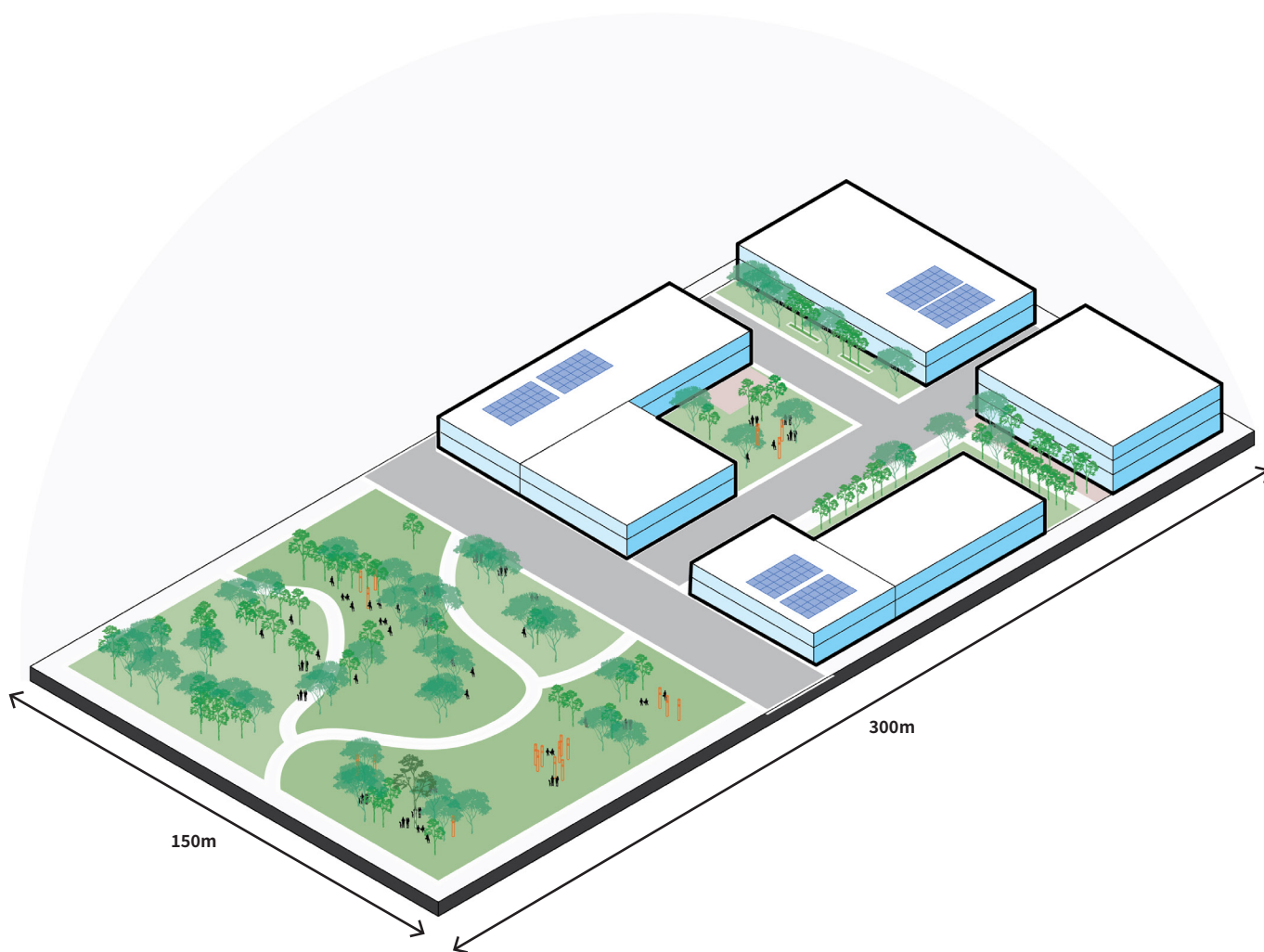
# AEROTROPOLIS CORE CITY CENTRE

<b>FSR</b>	<b>3.5:1</b>
<b>SITE COVERAGE</b>	<b>60%</b>
<b>PERMEABILITY:</b>	<b>40%</b>

BASED ON STREET BLOCKS.







## EMPLOYMENT ZONE LIGHT INDUSTRY

**FSR** 0.8:1  
**SITE COVERAGE** 60%  
**PERMEABILITY:** 40%

BASED ON STREET BLOCKS.





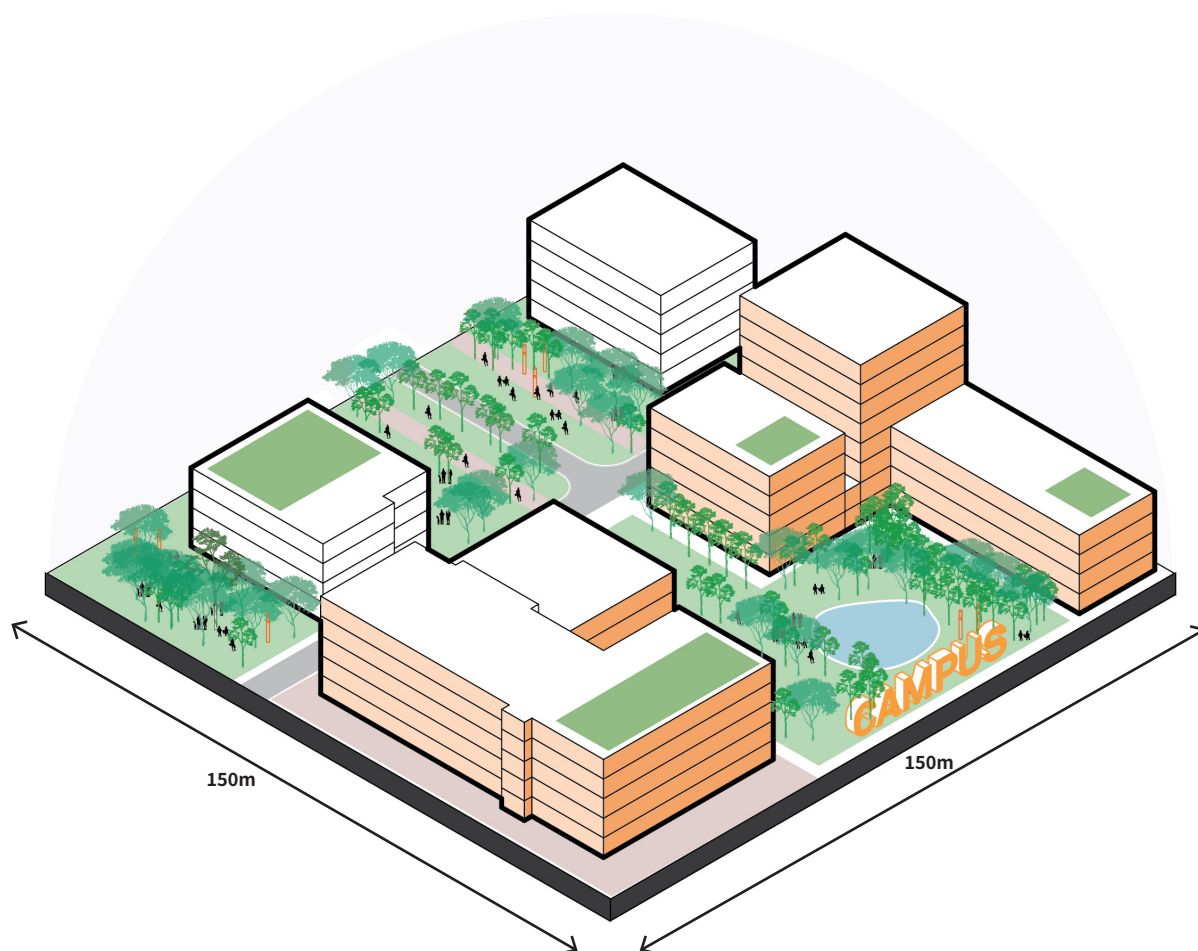


A perspective render of the Thompsons Creek regional park and active built form framing it.









## BUSINESS AND ENTERPRISE

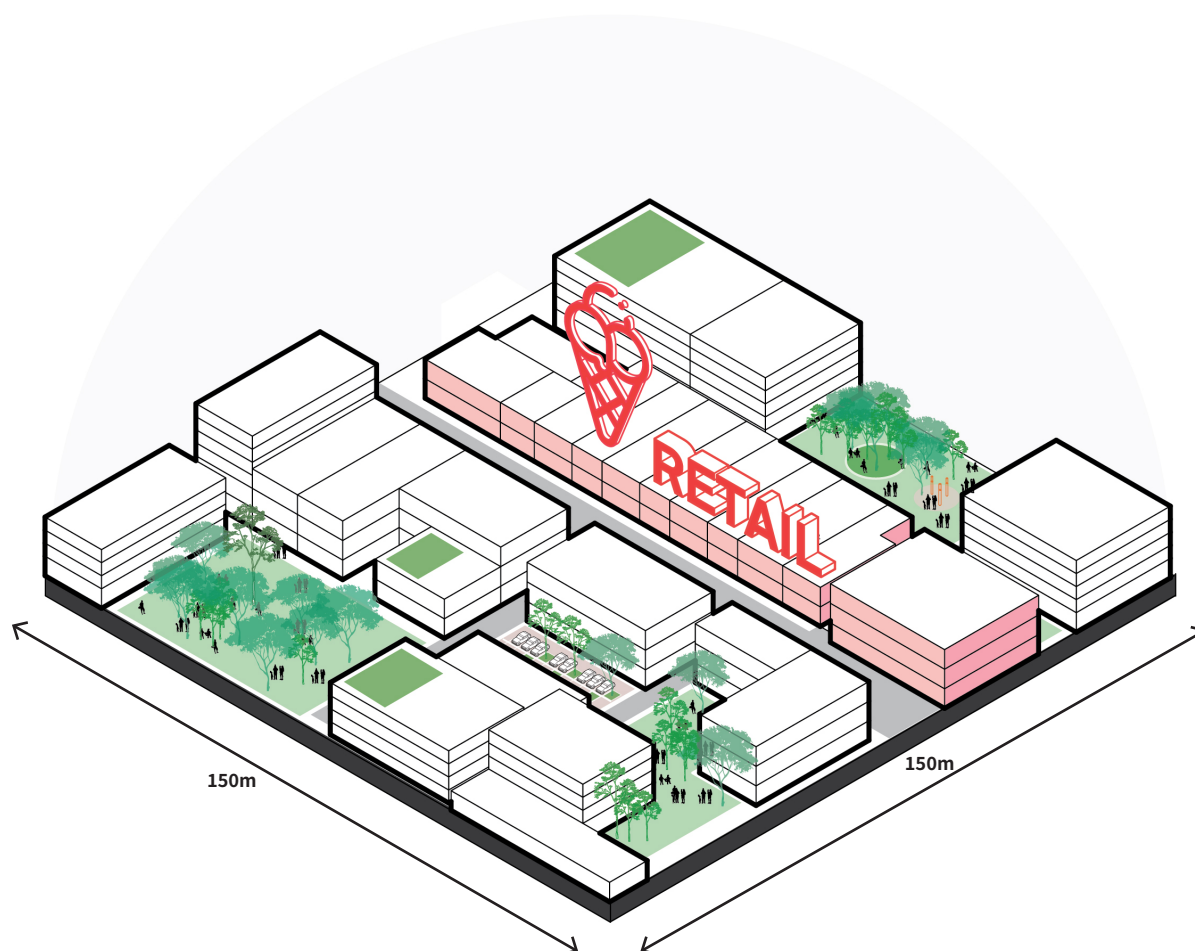
**FSR** (Indicative only)  
**SITE COVERAGE**  
**PERMEABILITY:**

**2.5:1**  
**60%**  
**40%**

BASED ON STREET BLOCKS.







## EMPLOYMENT ZONE CENTRE

**FSR** (Indicative only)  
**SITE COVERAGE**  
**PERMEABILITY:**

**0.8:1**  
**60%**  
**40%**



BASED ON STREET BLOCKS.



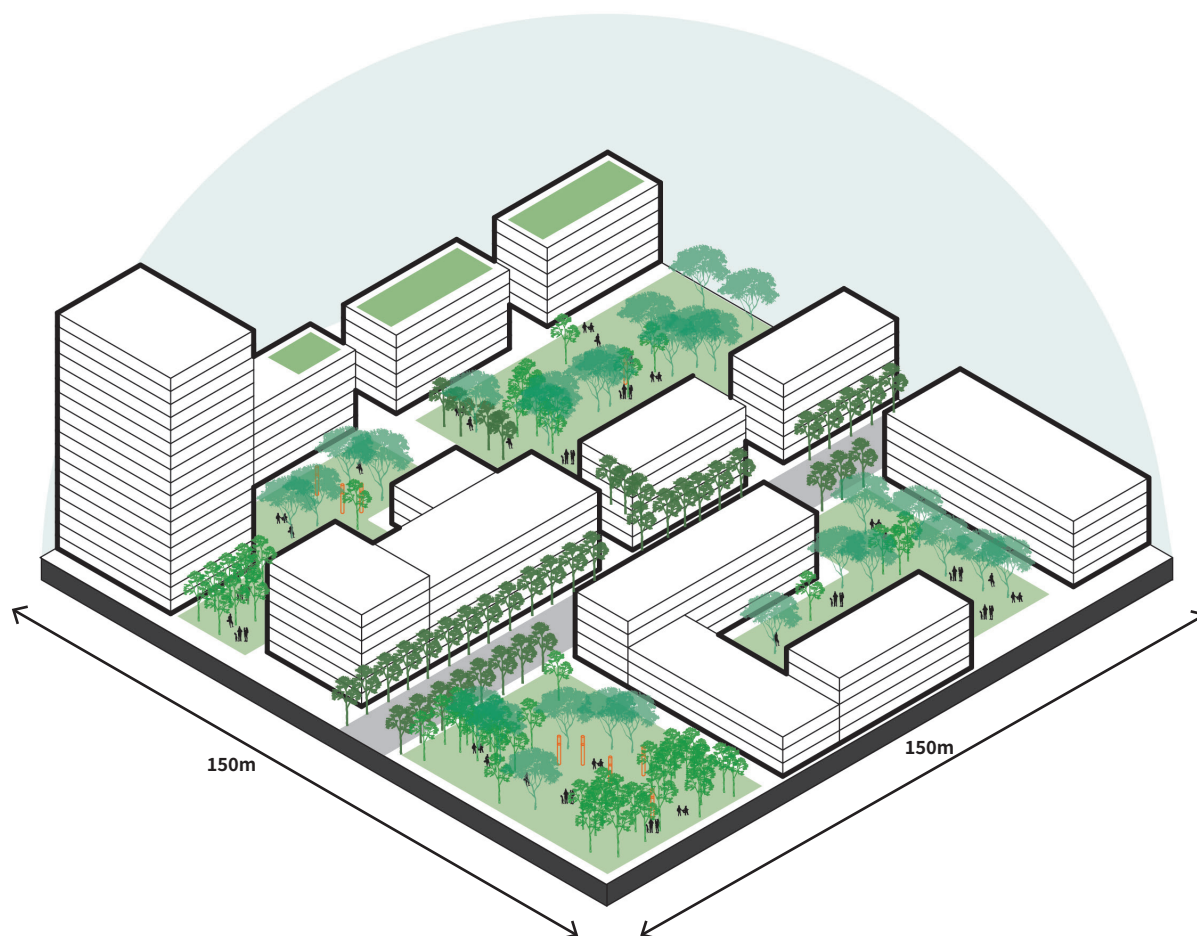


The Badgerys Creek precinct will include active transport corridors and green streets to complement employment uses.









## HIGH DENSITY RESIDENTIAL MIXED USE

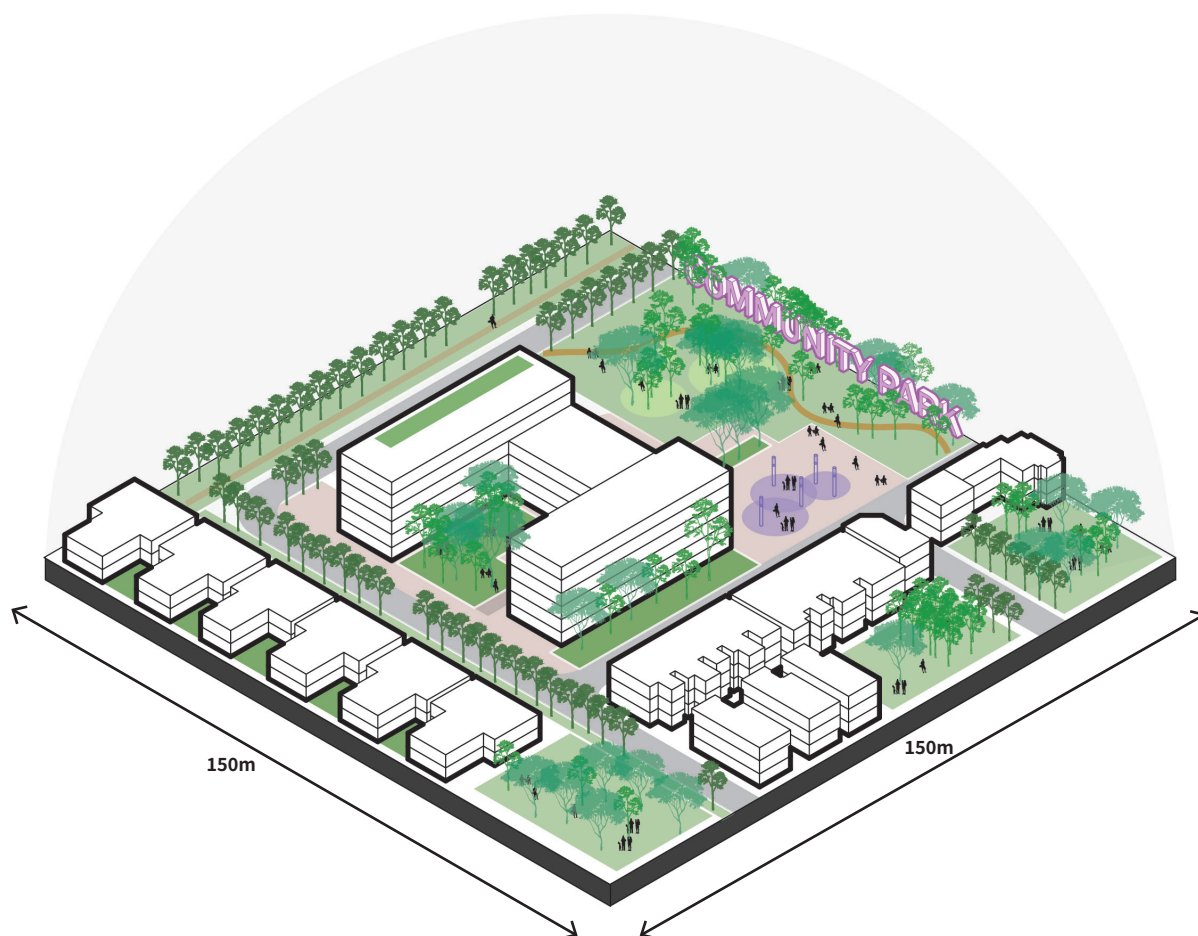
**FSR** (Indicative only)  
**SITE COVERAGE**  
**PERMEABILITY:**

**3:1**  
**60%**  
**40%**

BASED ON STREET BLOCKS.







## MEDIUM DENSITY RESIDENTIAL MIXED USE

**FSR** (Indicative only)

**2.5:1**

**SITE COVERAGE**

**50%**

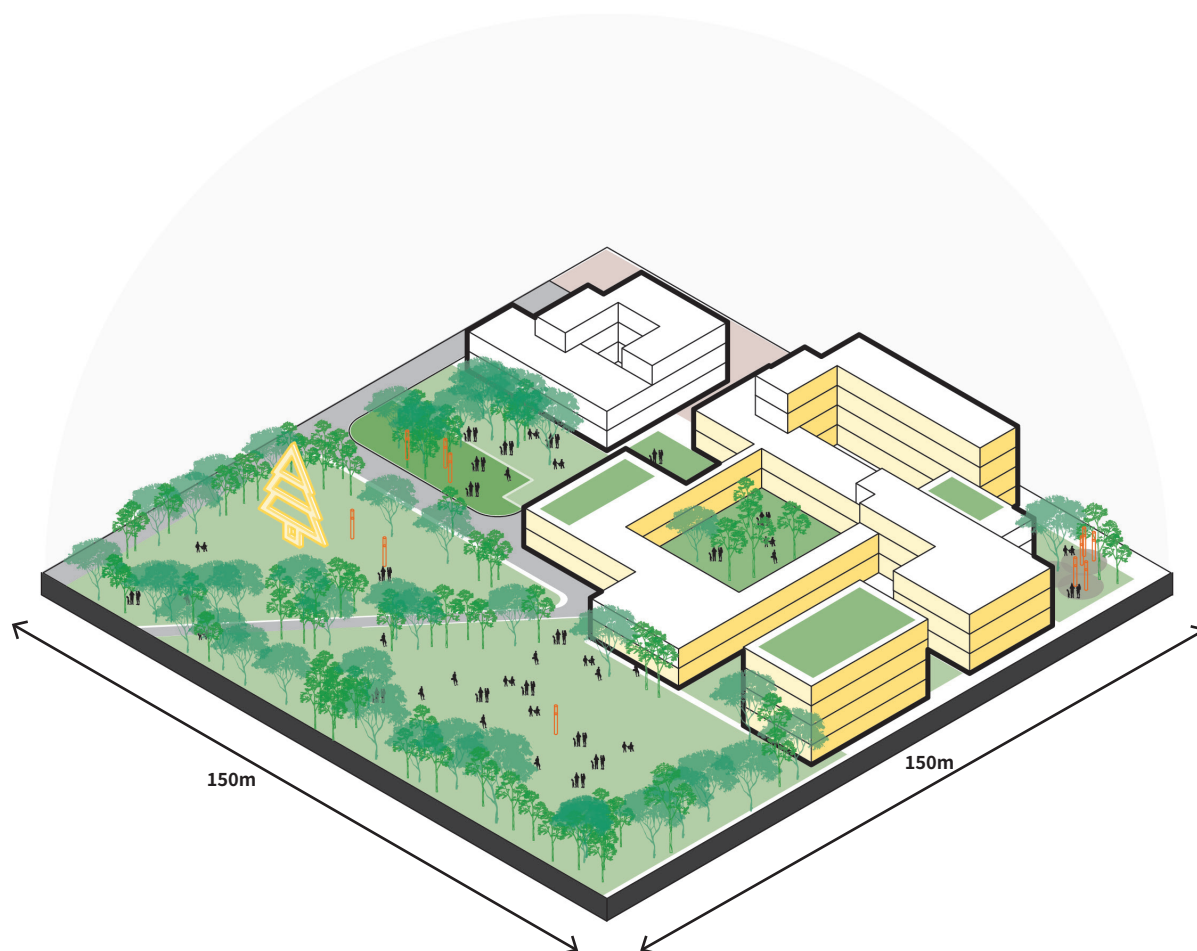
**PERMEABILITY:**

**50%**

BASED ON STREET BLOCKS.







## COMMUNITY AND SCHOOLS

**FSR** (Indicative only)  
**SITE COVERAGE**  
**PERMEABILITY:**

**0.8:1**  
**60%**  
**40%**

BASED ON STREET BLOCKS.







Employment areas west of Badgerys Creek Road will include high quality architecture, paths and open space.









The Aerotropolis Core, Badgerys Creek and Western Sydney (Nancy Bird Walton) Airport, with Agribusiness precinct in the background



# MIXED USE

## ACHIEVING A MIXED USE CENTRE

The mixed use zone within the Western Sydney Aerotropolis Plan provides for mixed flexible employment, residential and noise sensitive uses on land not affected by the ANEC/ANEF 20 and above contours in high amenity areas and areas well connected to public transport.

The urban design framework facilitates a flexible approach to the delivery of mixed use outcomes, with certain conditions. Those being:

- Employment densities need to be achieved over time; and
- The mixed use centre needs to be a focus for central city, employment and mixed use activities.

The urban design framework envisages that entirely residential buildings can be accommodated within the mixed use zone, but only in those areas where other non residential uses on the same lot or within the same building are also contained at ground level.

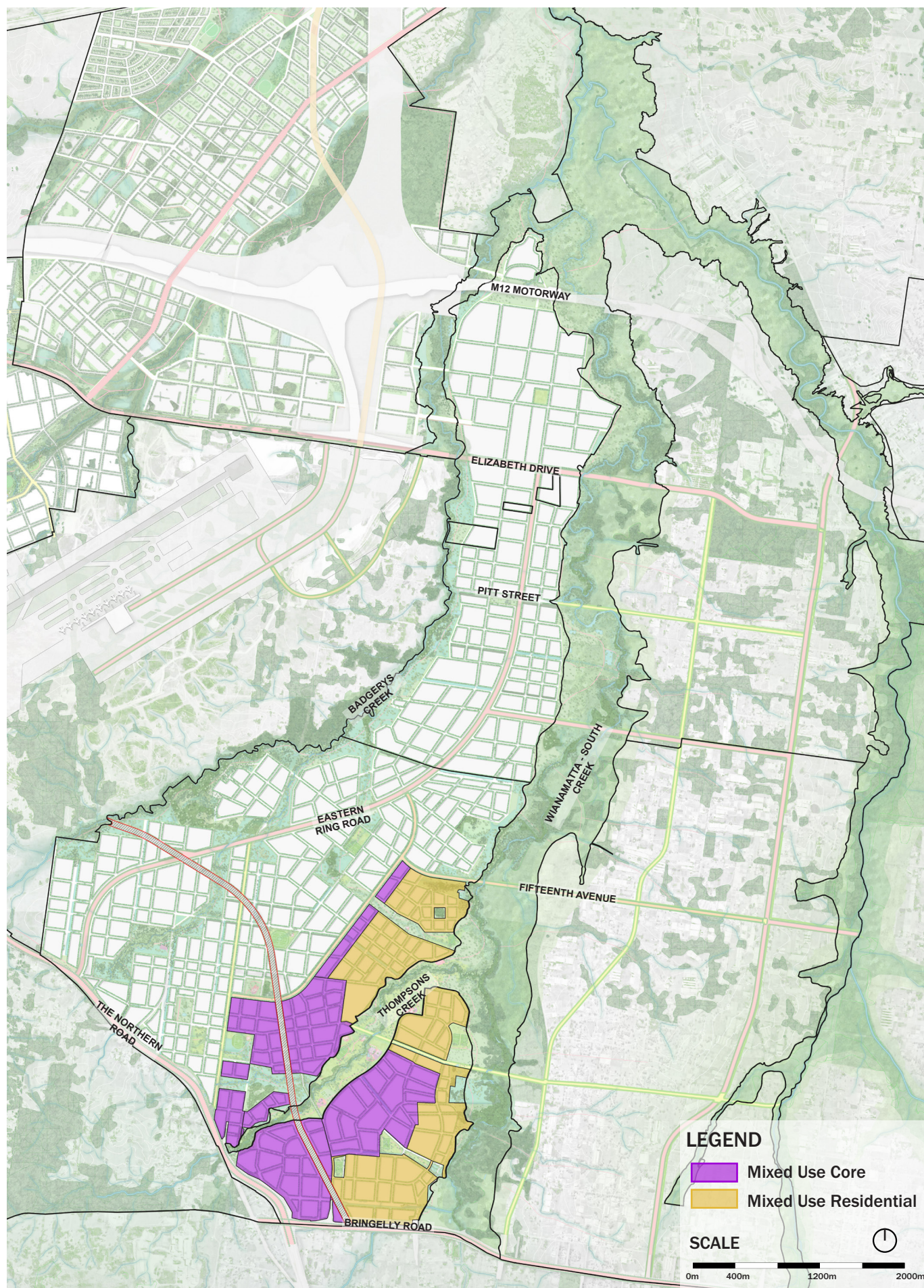
## ACTIVATION

The Aerotropolis Core is intended to be a highly activated place that provides significant amenity for the benefit of knowledge focused workers and businesses.

The general principles towards ground level activation across the Aerotropolis Core precinct are:

- The land identified for Mixed Use Core must contain active frontages (shops, cafes, business services, commercial offices, lobbies and similar land uses)
- The land identified for Mixed Use Residential may contain residential at ground level, subject to non residential uses being located at ground level within the same building or lot.







# HEIGHT AND FSR FRAMEWORK

## BALANCING OLS, CENTRE PRIMACY AND AMENITY

Heights across the Aerotropolis are controlled cognisant of a range of factors:

- Achieving the density and population targets established by the WSAP
- Promoting the densest and tallest form within the mixed use centre of the Aerotropolis Core
- Providing for urban density adjacent to the amenity of parks and Wianamatta corridor
- Ensuring buildings and structures do not impede on the Obstacle Limitation Surface (OLS) associated with the airport

The height map adjacent describes the maximum height that may be applied to achieve the desired built form and land use outcomes across the Aerotropolis Core and Badgerys Creek precincts.

It is important to note that these heights are maximums, and the associated future levels of land, existing ground levels and the ranges in topography across the precinct need to be taken into account with the Western Sydney Aerotropolis Plan SEPP maps and associated OLS height limits. Parts of Core A and B and Frame A will need to have moderated heights below the maximum prescribed in order to comply with OLS height limits. This approach provides flexibility for longer term planning, should OLS limitations be reviewed in the future.

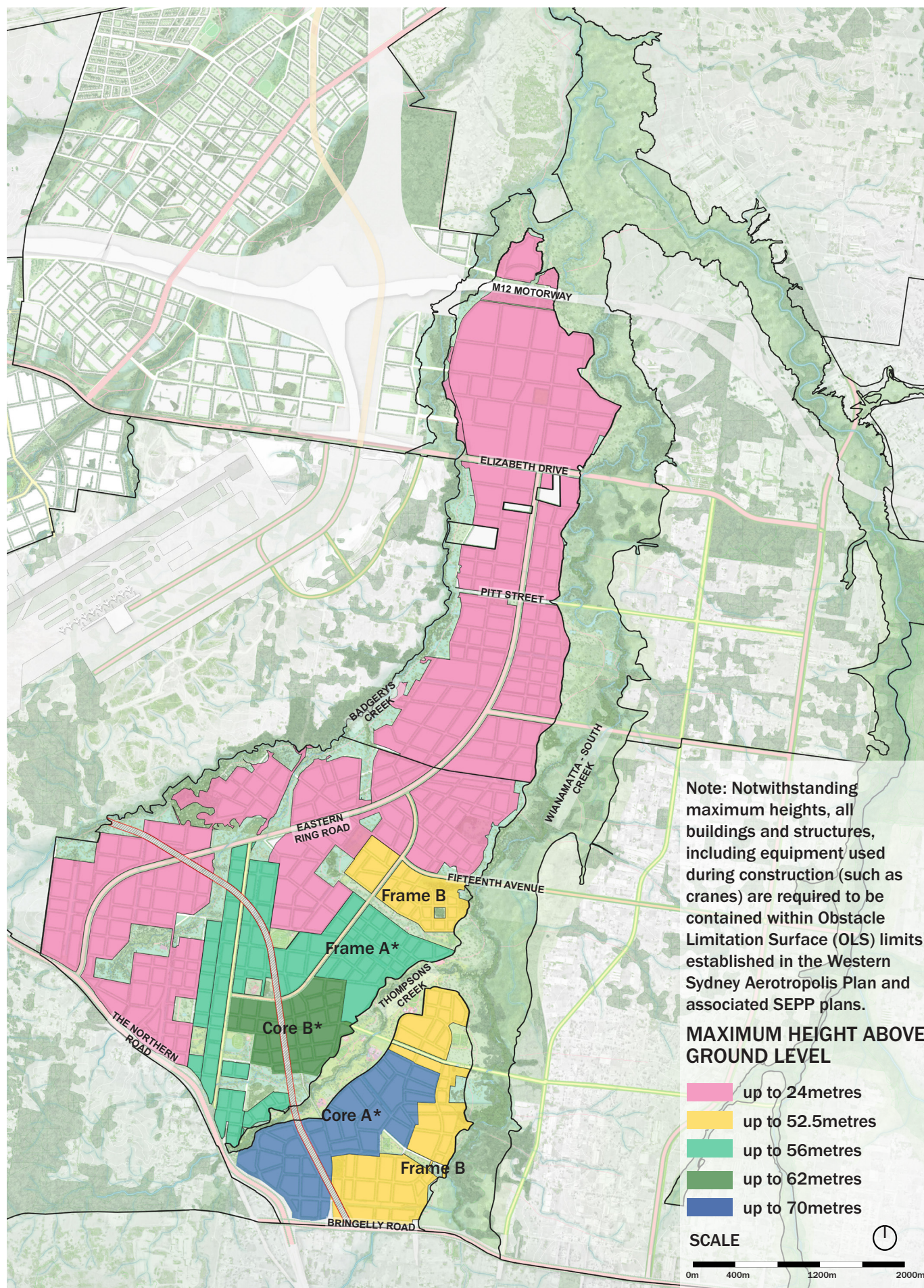
Building construction methods, including cranes or associated infrastructure need to be contained within the OLS height limit unless otherwise approved.

Refer to the plans overleaf for specific height limitations across the potential future development blocks. The detailed street block plan is not to be used as a planning instrument - it is a design tool only.

			Aerotropolis Core	Badgerys Creek
			Maximum Height (metres above ground level)	Maximum Height (metres above ground level)
Mixed Use	Centre - Metropolitan	Core A*	70	-
		Core B*	62	-
		Frame A*	56	-
		Frame B	52.5	-
	Centre – Specialised	Core	-	-
		Frame	-	-
Enterprise / Agribusiness	Centre – Local		24	24
	Centre – Local Employment		24	24
	Enterprise / General Employment		24	24

\* Note: Notwithstanding maximum heights, all buildings and structures, including equipment used during construction (such as cranes) are required to be contained within Obstacle Limitation Surface (OLS) limits established in the Western Sydney Aerotropolis Plan and associated SEPP plans.





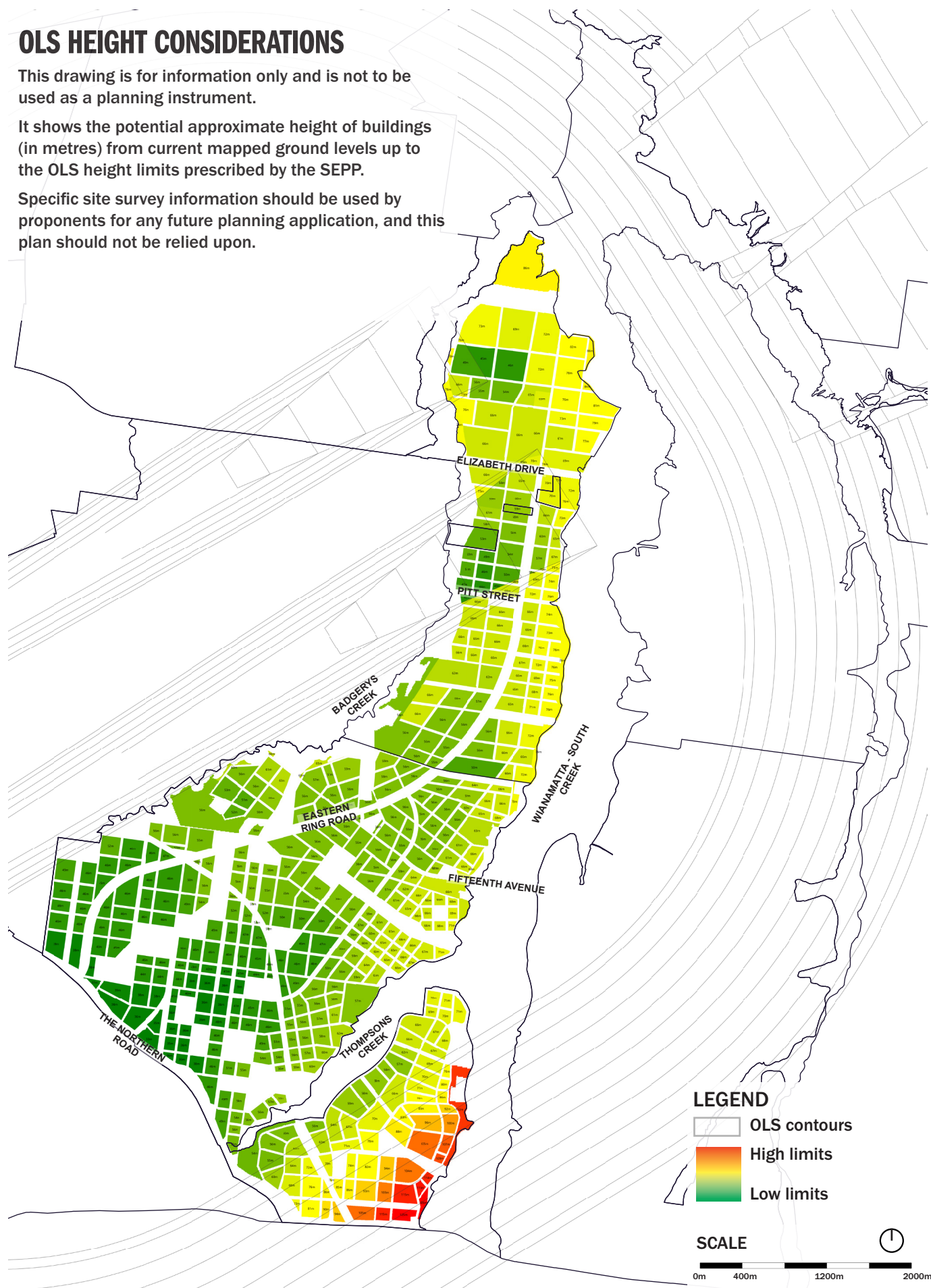


## OLS HEIGHT CONSIDERATIONS

This drawing is for information only and is not to be used as a planning instrument.

It shows the potential approximate height of buildings (in metres) from current mapped ground levels up to the OLS height limits prescribed by the SEPP.

Specific site survey information should be used by proponents for any future planning application, and this plan should not be relied upon.





## MIXED USE ZONE FSR CONTROLS

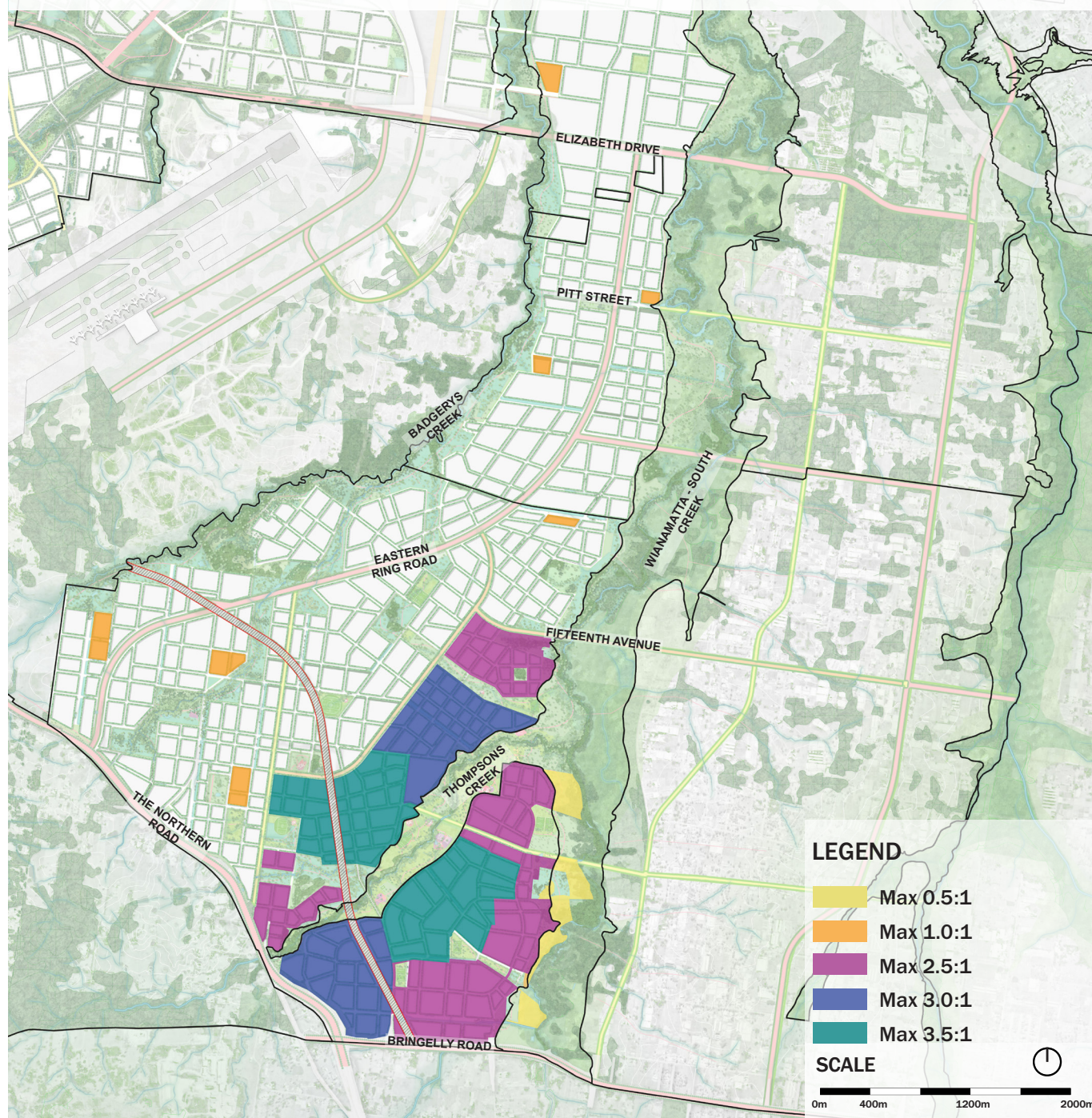
The floor space ratio map describes the controls applying to development across the mixed use zone (as applied by the Western Sydney Aerotropolis SEPP).

The controls have been derived based on the desired built form outcome, the employment and population targets established in the WSAP, and help to ensure appropriate bulk, massing, articulation and separation of development within the central area of the Aerotropolis. It is an important control to help achieve built form quality.

### FSR Transfer

A number of areas have been highlighted for FSR transfer, and these are indicated in yellow on the map below. These areas are private property, contained within the Wianamatta South Creek precinct and subject to the Environment and Recreation zone - and so have very little development potential.

Where FSR transfer is taken up, the associated floor space is to be transferred to the corresponding land title within the mixed use zone, and the land provided for public access (or public ownership). The land may be dedicated for public use, or an alternative arrangement secured providing for public access and appropriate maintenance regimes.





# STREET BLOCK SIZES

Maximum block sizes provided in the table below to allow a good degree of permeability and ensure a connected movement network.

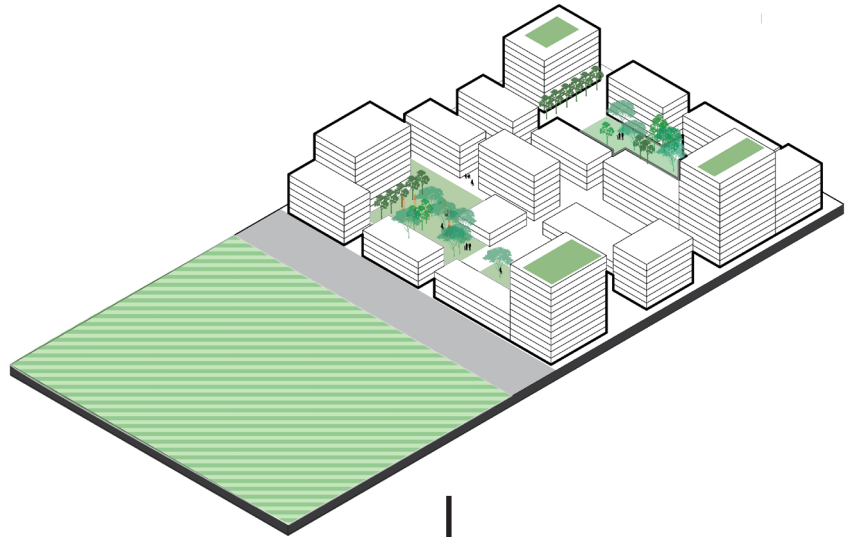
Land Use	Subdivision Block Size
Mixed use centre	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Employment zone centres	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Business uses	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Light industry enterprise	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
High density residential mixed use	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Medium density residential mixed use	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Community infrastructure and schools	Maximum length of a block 250m. Mid-block connections for pedestrians and cyclists provided no more than 130m apart
Agribusiness (outside centres including local)	Maximum length of a block 350m. Mid-block connections for pedestrians and cyclists provided no more than 150m apart
Enterprise zone (outside centres including local)	Maximum length of a block 350m. Mid-block connections for pedestrians and cyclists provided no more than 150m apart



# TRANSFERABLE FSR

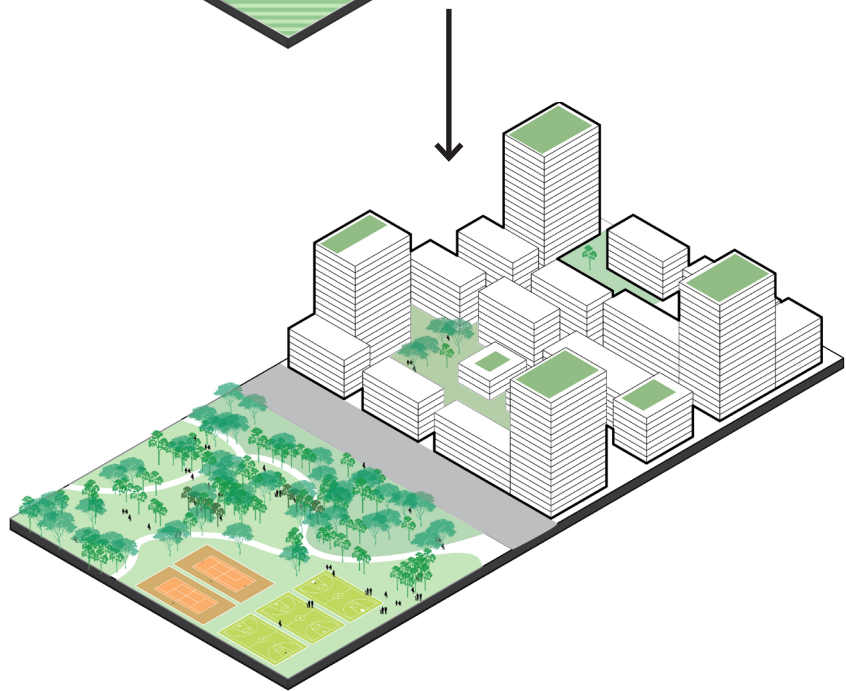
## WITHOUT FSR TRANSFER

A number of existing properties across the Aerotropolis Core extend beyond the mixed use zone into the Environment and Recreation zone, associated with the Wianamatta - South Creek precinct. The affected Environment and Recreation land tends to be affected by the 1% AEP and has limited development potential. In these circumstances, the land has little development potential, but contributes significantly to the parkland city in terms of environmental functions.



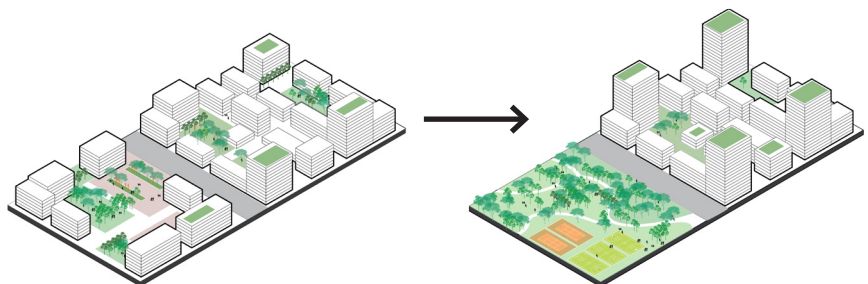
## WITH FSR TRANSFER

The precinct plan provides opportunity for affected land owners to harvest floor space ratios across affected Environment and Recreation zoned land and apply that development potential to the associated land zoned mixed use. In return for greater development potential, the associated Environment and Recreation zoned land is dedicated for public use and access.



## PROVIDING FOR INDICATIVE PARKLAND

A similar approach applies to that land identified for indicative parkland within the precinct plan. In this instance, a negotiated approach to greater development potential would occur, as FSRs typically do not apply to the indicative parkland areas.





# SOCIAL, CULTURAL AND HERITAGE FRAMEWORK

## PRINCIPLES

### 1. Co-location with open space

- school - sport & recreation facility - open space
- libraries, social & cultural institutions - park frontage

### 2. Co-location of complementing institutions & services

- libraries, social and cultural institutions
- libraries + tertiary institutions
- local centres + active recreation in enterprise zone

### 3. Location and distribution throughout the precincts to ensure good accessibility to both workers and residents

- Good public and active transport accessibility
- proximity to interconnected open space facilitates and encourages active transport

### 1. Sport and recreational facilities

In the Mixed Use zone of the Aerotropolis Core - sportfields are within low flood risk of Wianamatta & Thompson Creek Regional parklands and co-located with educational facilities.

Within the Enterprise zone of Aerotropolis Core and Badgerys Creek, sportfields are located within nominated parklands .

Multi purpose sport courts are distributed throughout the precincts to ensure workers and residents have access to active recreation within their local area. In the Enterprise zone, these are located next to local centres.

Indoor sportfields and aquatic and swimming centres are located in urban core areas , oriented towards open space and with good accessibility to public transport - Metro station and rapid bus transport route.

All sport & recreation facilities have good accessibility by public and active transport.

### 2. Educational facilities

Educational facilities are oriented towards open space - Wianamatta & Thompsons Creek Regional parklands and other large parks.

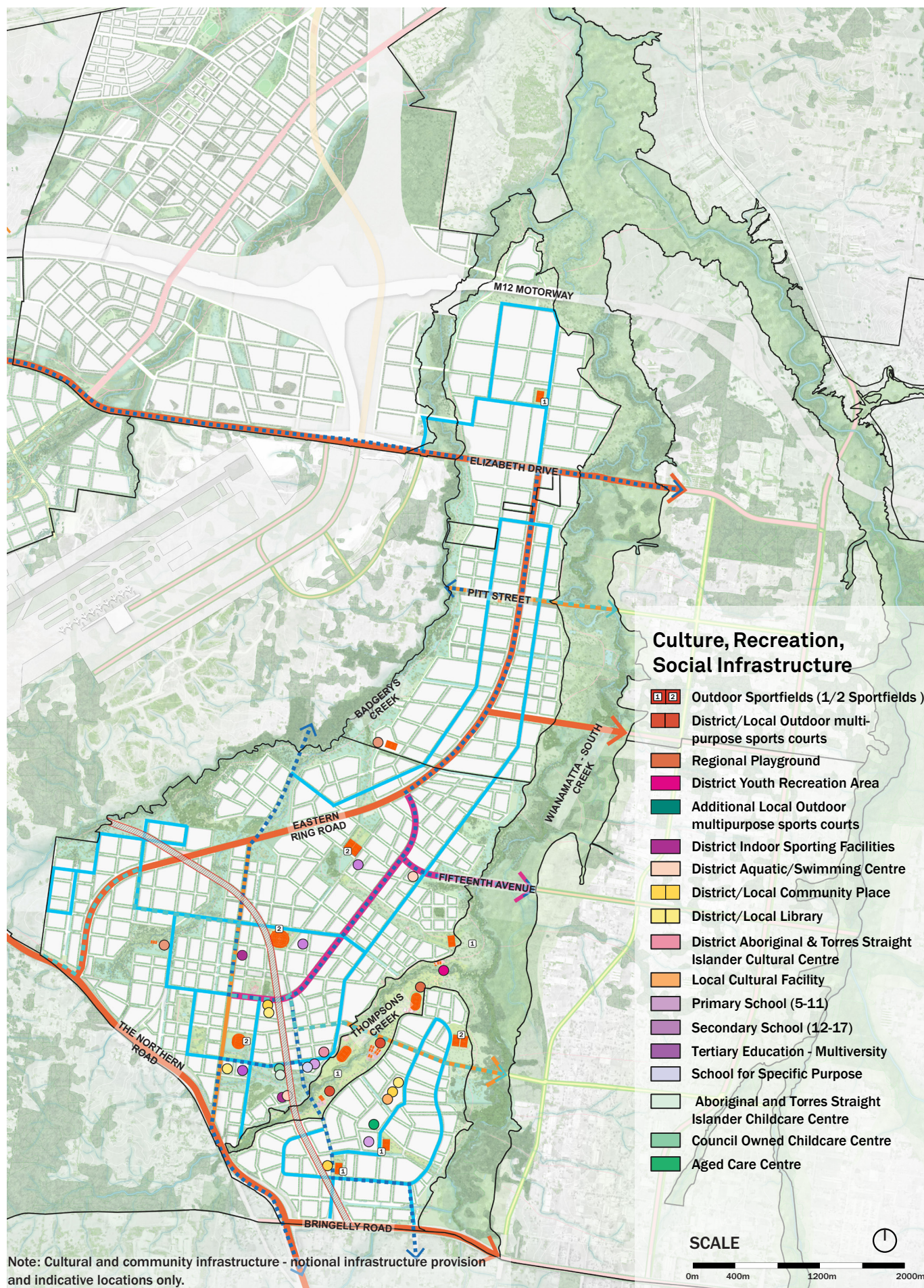
### 3. Social and cultural infrastructure

Libraries, community centres and cultural institutions are the core of the community life - for residents, workers and visitors alike. Prominent locations with park frontage location at the city core or co-located with tertiary education facility, great public and active transport accessibility.

### 4. Civic Spaces

Civic spaces should be considered in the mixed use centres of Aerotropolis Core. These should be co-located with civic institutions, libraries and cultural centres.







# KEY PLANS

## CITY CENTRE AND METRO

The Metro Station at the Aerotropolis Core is a critical item of infrastructure that will catalyse development and enable the intended spatial, employment, liveability and connectivity outcomes.

To support the Metro, a dense, mixed use centre is planned. The key principles are:

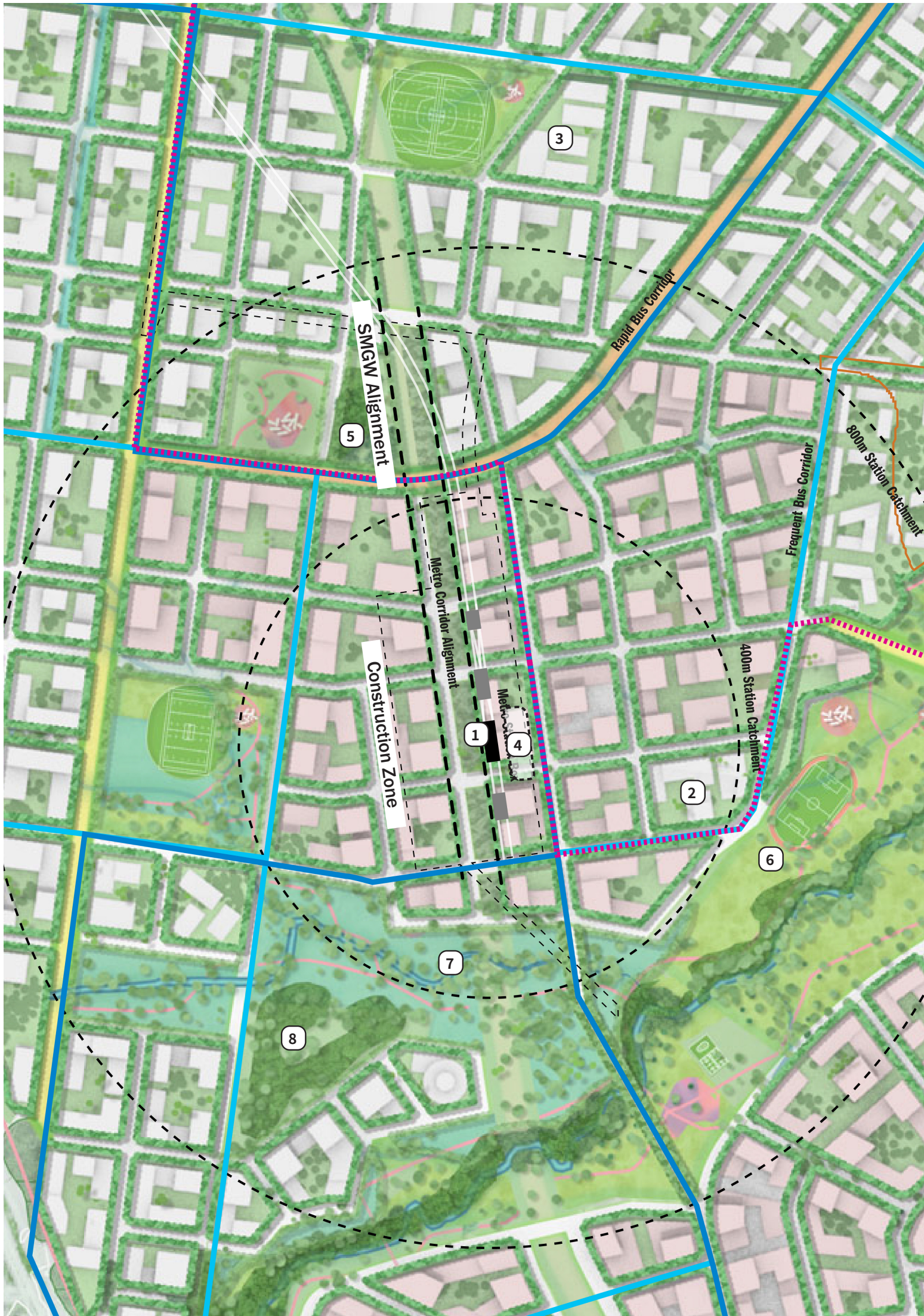
- A connected grid of streets at the core of the Aerotropolis that provides a framework for dense, mixed use development
- Streets provide a direct link between the city core, Metro and creek system, and allow clear sight lines between station and Thompsons Creek
- Investigation of a civic plaza to support Metro arrival experience at the time of master planning
- A high quality public realm, including streets, parks and civic plazas
- Connectivity between bus and Metro transit, with investigation of a bus only plaza to be considered at the time of master planning
- Active streets within an 800 metre walkable catchment of the Metro Station
- Integrated / over-station development is supported, however it is subject to limitations associated to basements and structures. Heights of buildings above the Metro tunnel are subject to engagement with Transport for NSW
- Roads should align to the Metro station buildings, tunnel and corridor

Any additional floor space capacity that may result from the announced Metro stations (Northern Gateway and Aerotropolis) will require a detailed transport study during master planning to demonstrate the movement network can function to standards satisfactory to Transport for NSW the approval authority.

### Annotations

1. **Metro Station and Plaza**
2. **Public School**
3. **Secondary School**
4. **Potential bus station / plaza**
5. **Park and retained vegetation**
6. **Thompsons Creek Regional Park**
7. **Ephemeral Creek**
8. **Park to accommodate 1% AEP flood extent**















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## KELVIN PARK HOMESTEAD

The Kelvin Park homestead is a State Heritage listed item. The urban design framework identifies the land for Residential Mixed Use, offering potential for a range of outcomes.

The key elements are that the homestead retains its relationship with Thompsons Creek, both physically and visually, consistent with the approved Conservation Management Plan.

As the homestead is in private residence, the land use reflects this status. Ultimately, to contribute to the intended knowledge-focused employment outcomes of the Aerotropolis Core, the homestead and the adjacent land could be used for a more public use, such as education, civic uses, hospitality or similar. Notwithstanding the potential 'public' use, retention of the homestead in private ownership is recommended.

The urban design framework purposefully retains a flexible arrangement of built form around the homestead, subject to retention of conservation management plan principles.

1. Existing Kelvin Park homestead building
2. Development area to be consistent with any approved conservation management plan
3. Visual connections between homestead and Thompsons Creek and from the surrounding precinct to the homestead
4. Open landscape areas enabling clear visual connectivity



Rapid Bus Corridor

Frequent Bus Corridor

400m Station Catchment

800m Station Catchment

800m Station Catchment

Bus Capable Road

3

2

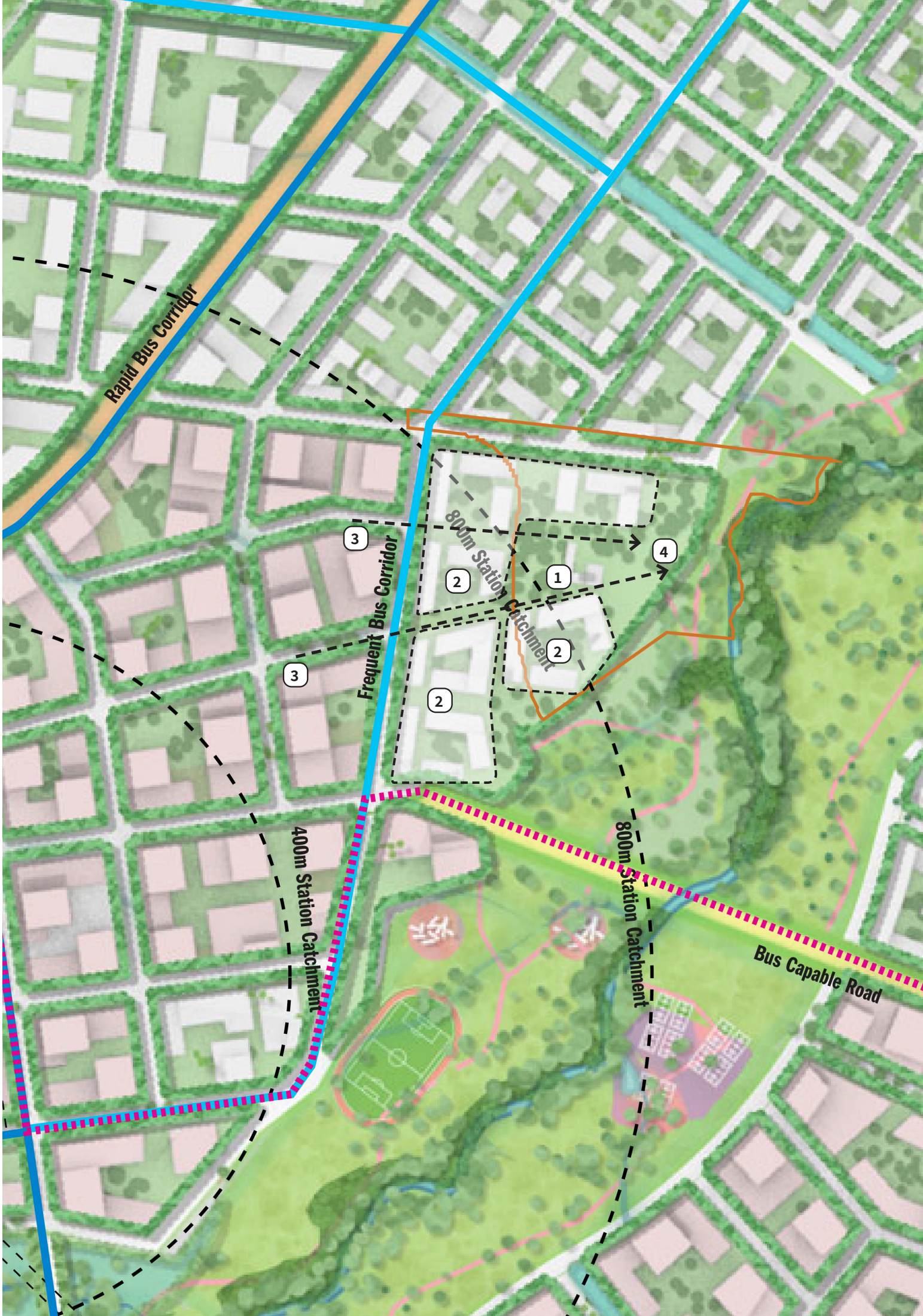
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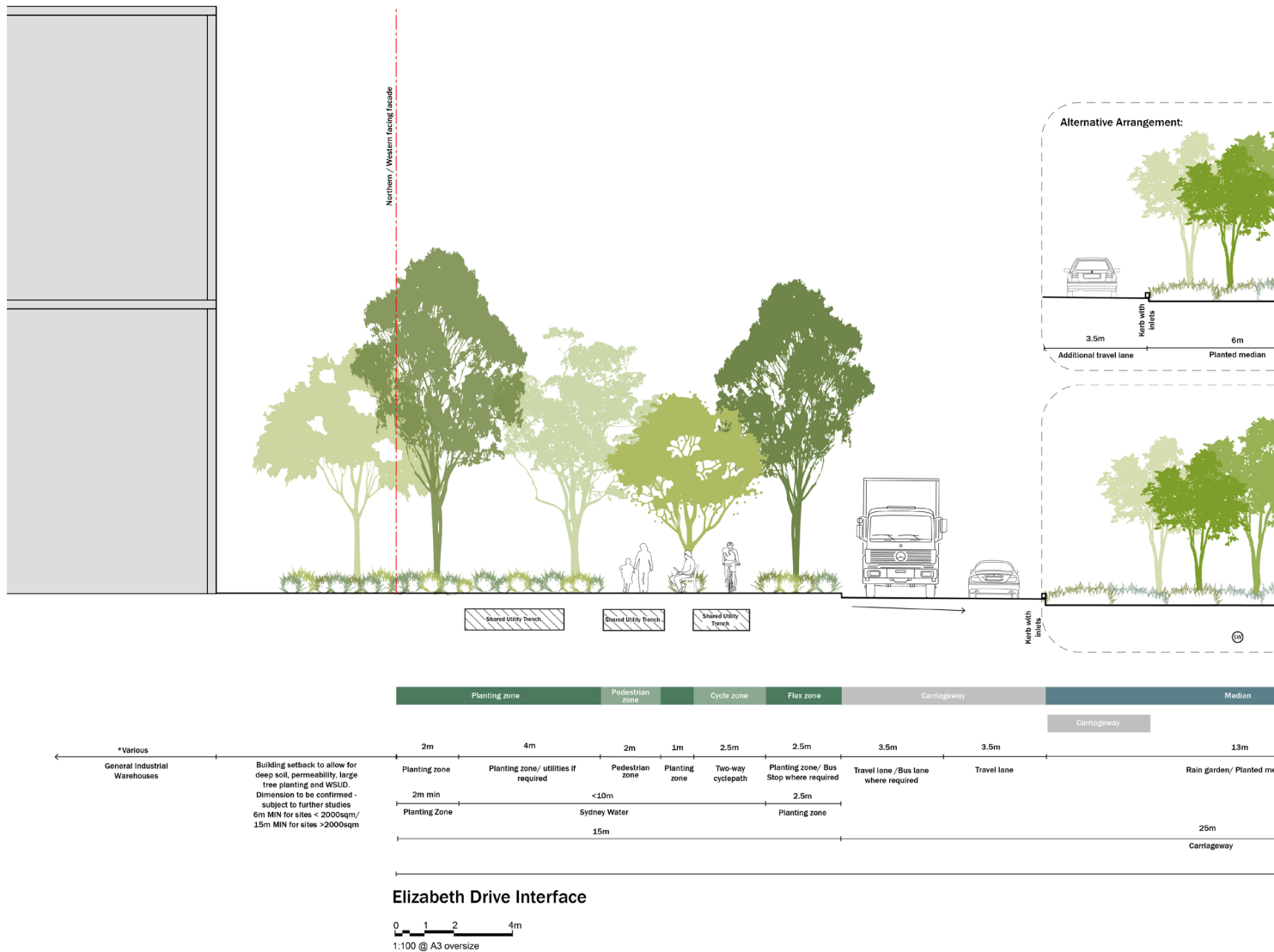
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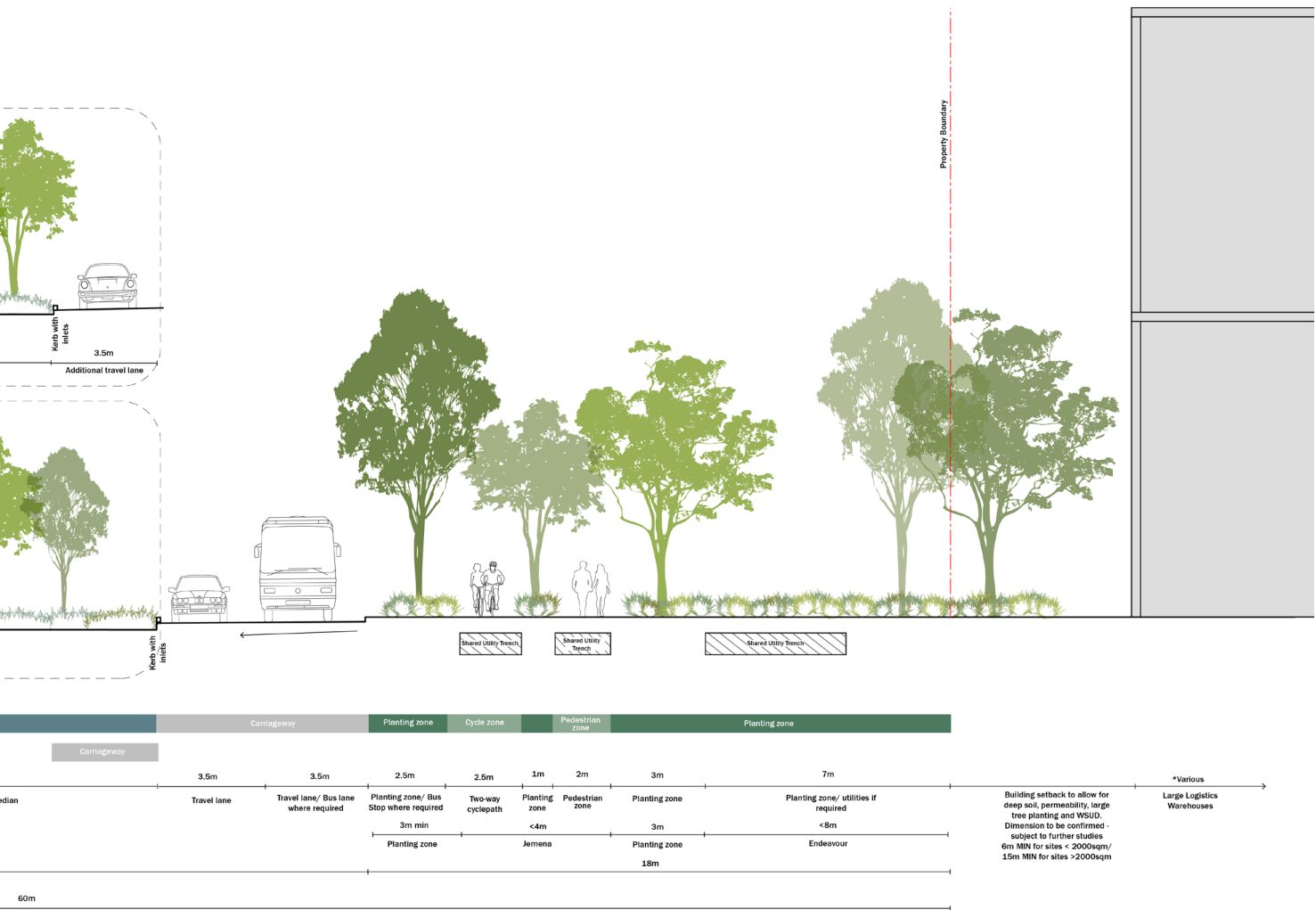
# INTERFACES - ELIZABETH DRIVE





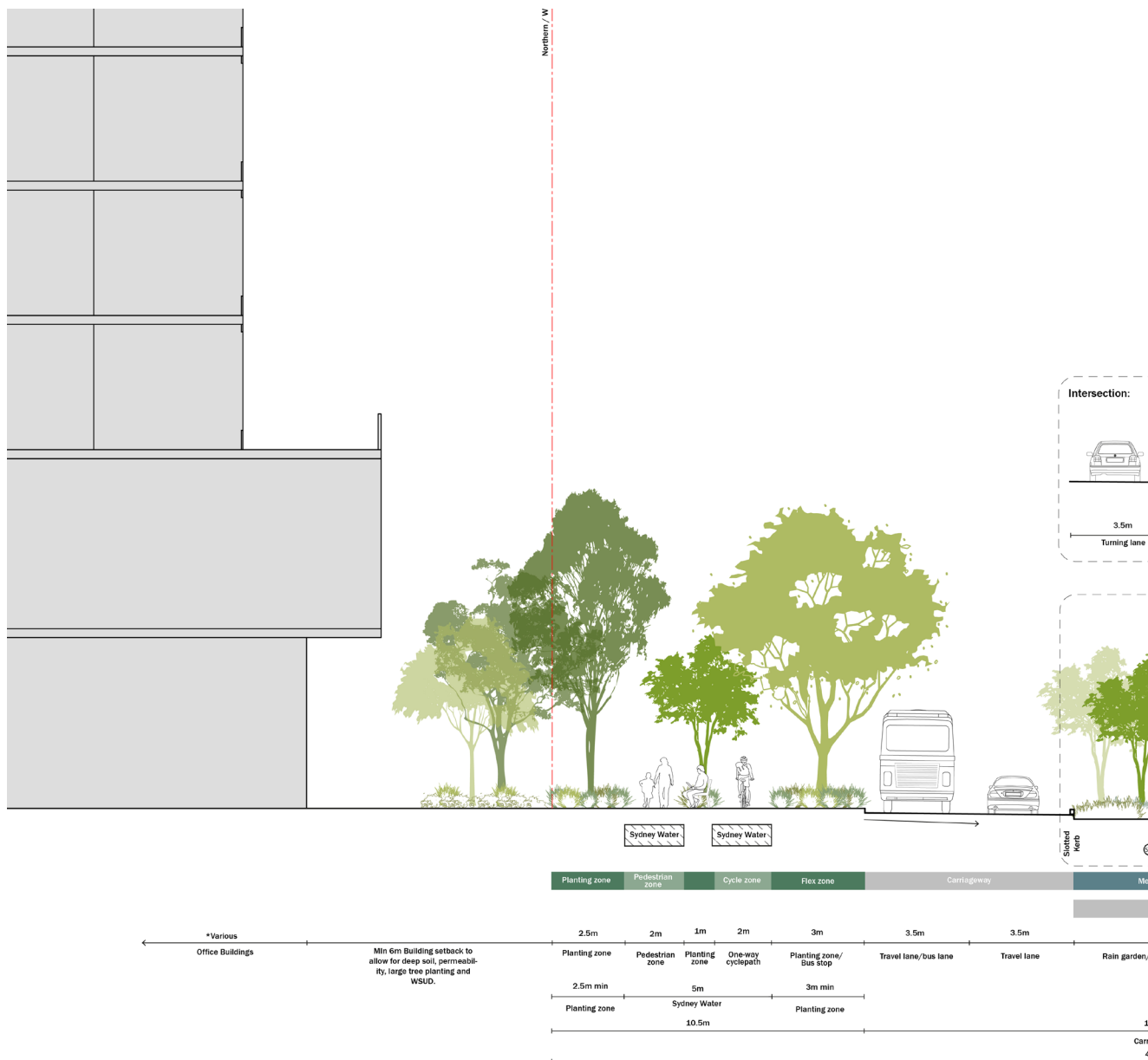
OBJECTIVES

Elizabeth Drive will be a busy arterial road with controlled intersection and access. However, buildings should not address Elizabeth Drive as a 'back interface'. The development interface needs to provide an attractive and landscaped interface that complements the intent of the Western Parkland City. Development should be set back to allow deep soil planting of trees and understorey. Buildings should limit visual clutter and provide an attractive and clean edge.





# INTERFACES - BADGERYS CREEK ROAD



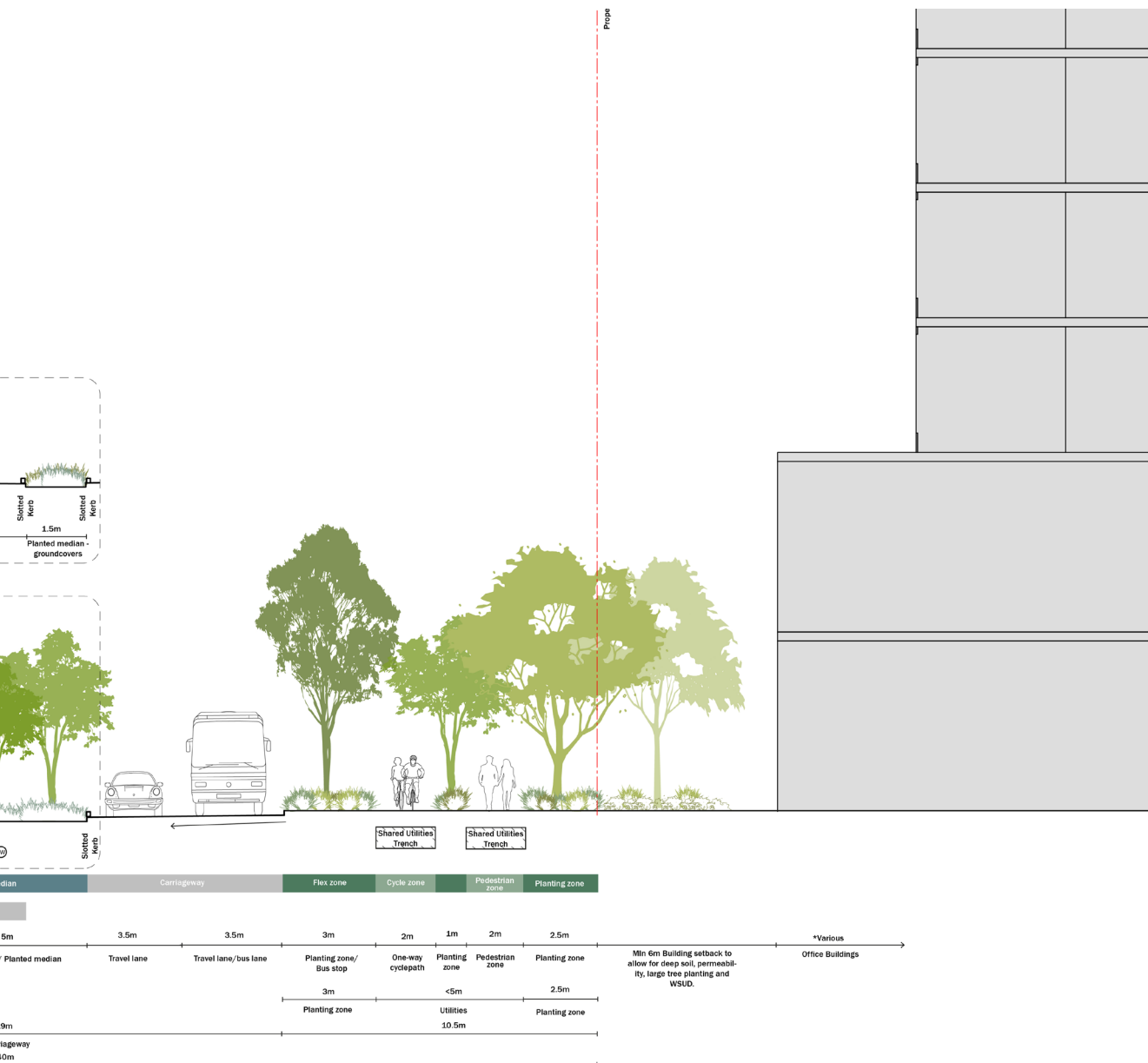
Badgerys Creek Road Interface



## OBJECTIVES

Badgerys Creek Drive is an important boulevard within the Aerotropolis Core, providing entry sequence, activation and employment roles. Development on both sides of Badgerys Creek Road needs to be coordinated in order to provide a cohesive avenue of knowledge-based employment activity.

The development interface needs to provide an interface that enables pedestrian amenity, activity at ground level and the front doors of buildings to present to the road. Development should provide a setback area for deep soil planting of trees and understorey. Buildings should limit visual clutter and provide an attractive and clean edge.





# GLOSSARY

Term	Definition
1 in 100-year flood	A flood that has a 1% chance of occurring in any given year within a 100-year cycle.
5G	Fifth-generation cellular network technology.
Acid sulfate soils	Naturally occurring sediments and soils containing iron sulfides (principally pyrite) or their precursors or oxidation products, whose exposure to oxygen leads to the generation of sulfuric acid (for example, by drainage or excavation).
Active street frontage	<p>A ground floor business or retail building street frontage that has direct and level entry and openings allowing physical and visual access that encourages interaction between the inside of the building and the adjoining external areas, including footpaths, road reserves or public spaces.</p> <p>Active street frontages support pedestrian safety and amenity and provide an interface between the public and private domain.</p>
Aerospace	The branch of technology and industry concerned with the research, design, manufacture, operation and maintenance of aircraft, space craft, and their components and supporting services.
Aerotropolis	A metropolitan area where infrastructure, land uses and economy are centred on an airport and includes the outlying corridors, and aviation orientated business and residential development that benefit from each other and their accessibility to the airport.
Aerotropolis Core	This is the central city at the core of the Aerotropolis activity associated with the Airport. The combination of uses, activities, development and places are reliant on and complementary to the operation of a global airport.
Agribusiness	Businesses associated with the production, processing, marketing and distribution of agricultural products, especially at a large and integrated scale.
Agriculture	Generally associated with traditional primary production. It includes the cultivation of land for the growing of crops and breeding of animals.
Agriport	A high-tech food production facility that enables industry collaboration at scale to intensively and sustainably produce fresh value-added high-quality produce and pre-prepared food.
Airside	All parts of an airport around aircraft and buildings only accessible to authorised personnel.
Amenity	The 'liveability' of a place that makes it pleasant and agreeable for individuals and the community. Amenity includes, but is not limited to, the enjoyment of sunlight, views, privacy and quiet.
Ancillary development	Development that is subordinate or subservient to the dominant purpose for which a site is used or proposed to be used.
Australian Noise Exposure Contours (ANEC)	Anticipated forecasts of future noise exposure patterns based on indicative flight paths around an airport that constitute the contours.
Australian Noise Exposure Forecast (ANEF)	Approved forecasts of future noise exposure patterns around an airport that constitute the contours on which land use planning authorities base their controls.
Articulation	The architectural treatment of the exterior of a building using the different building elements that make up that part of the building. It involves how the building's exterior surfaces, edges, corners and materials unite to give the building its form.



Term	Definition
Asset Protection Zone	A fuel-reduced area surrounding a built asset or structure which provides a buffer zone between a bush fire hazard and an asset. The APZ includes a defensible space within which firefighting operations can be carried out. The size of the required asset protection zone varies with slope, vegetation and Fire Danger Index (FDI).
Benchmark solutions	The means by which a development may achieve the intent of a planning objective or performance outcome.
Better Placed	An integrated design policy prepared by the NSW Government Architect.
Biodiversity offsets	Measures that compensate elsewhere for the adverse impacts of an action, such as clearing for development.  Biodiversity offsets protect and manage biodiversity values in one area in exchange for impacts on biodiversity values in another.
Blue-Green Infrastructure Framework	An interconnected network of natural and semi-natural landscape elements (sometimes referred to as blue or green infrastructure), including water bodies, urban canopy and open spaces.
Business incubator	A company that helps new and start-up companies to develop by providing services such as management training or office space.
Circular economy	A whole-of-system approach that accounts for the full cost and lifecycle of materials and retains the value of materials in the economy for as long as possible, reducing the unsustainable depletion of natural resources and impacts on the environment.
Climate change	A change of climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere in addition to natural climate variability.
Communications, navigation and surveillance facilities	Facilities that allow: → pilots to navigate when en-route between airports; → pilots to utilise terminal area navigation aids to conduct instrument approach procedures; → dialogue between pilots and Air Traffic Control; and → Air Traffic Control to monitor and confirm an aircraft location.
Country	For Aboriginal peoples, Country relates not only to the cultural group and land to which they belong, it is also their place of origin in cultural, spiritual and literal terms. Country includes not only the land but also waters and skies, and incorporates the tangible and intangible, knowledges and cultural practices, identity and reciprocal relationships, belonging and wellbeing.
Consent Authority	The same meaning as in Section 4.5 of the Environmental Planning and Assessment Act 1979.
Conservation (heritage)	Includes all the processes of looking after a place so as to retain its cultural significance. This includes preservation, protection, maintenance, restoration, reconstruction and adaptation.
Conservation (vegetation management)	All the processes and actions of looking after a place so as to retain its natural significance and includes protection, maintenance and monitoring. Conservation may also include regeneration, restoration, enhancement, reinstatement, preservation or modification, or a combination of more than one of these. Conservation includes conserving natural processes of change (as opposed to artificially accelerated changes).



Term	Definition
Contaminated land	Land in, on or under which a substance is present at a concentration above that normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.
Controlled activities	Any activity that infringes an airport's protected operational airspace and requires approval before it can be carried out. Controlled activities include: <ul style="list-style-type: none"> <li>a) permanent structures, such as building;</li> <li>b) temporary structures, such as cranes; and</li> </ul> any activities causing intrusions into the protected operational airspace through glare from artificial light or reflected sunlight, air turbulence from stacks or vents, smoke, dust, steam or other gases or particulate matter
Crime prevention through environmental design (CPTED)	A multi-disciplinary approach to deterring criminal behaviour through environmental design. Crime prevention through environmental design strategies rely upon the ability to influence offender decisions that precede criminal acts. The four principles of the approach are: <ul style="list-style-type: none"> <li>→ surveillance;</li> <li>→ access control;</li> <li>→ territorial reinforcement; and</li> <li>→ space management.</li> </ul>
Draft Cumberland Plain Conservation Plan (CPCP)	Will address impacts on biodiversity from urban growth through a conservation program that includes commitments and actions designed to improve ecological resilience and function over the long-term. The CPCP will enable land to be certified for development and areas avoided from development conserved. The CPCP will enhance a network of green spaces, natural and semi-natural systems in Western Sydney.
Defence	The branch of industry concerned with the research, design, manufacture, operation and maintenance of military equipment, supplies and services.
Design excellence	the highest level of architectural, urban and landscape design. Design excellence processes can include review panels, competitive design competitions. All processes require a form of design excellence assessment.
Development	As per the EP&A Act, development includes any of the following: the use of land; the subdivision of land; the erection of a building; the carrying out of a work; the demolition of a building or work; or any other act, matter or thing that may be controlled by an environmental planning instrument.
Development application	An application for consent under Part 4 of the EP&A Act to carry out development (not including an application for complying development) such as change of use of land, subdivide land, or building, landscaping and other work.
Development Control Plan (DCP)	Provides detailed planning and design guidelines to support established planning controls.



Term	Definition
Ecologically sustainable development	<p>Same meaning as in Section 6 (2) of the Protection of the Environment Administration Act 1991.</p> <p>ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:</p> <ul style="list-style-type: none"> <li>a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: <ul style="list-style-type: none"> <li>i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and</li> <li>ii. an assessment of the risk-weighted consequences of various options,</li> </ul> </li> <li>b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;</li> <li>c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration;</li> <li>d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as: <ul style="list-style-type: none"> <li>i. polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement;</li> <li>ii. the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste; and</li> </ul> </li> </ul> <p>environmental goals, having been established, should be pursued in the most cost-effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.</p>
End of trip facilities	<p>Designated places that support cyclists, joggers and walkers in using alternative ways to travel to work rather than driving or taking public transport. These types of facilities also benefit people who exercise during their lunch break.</p> <p>End of trip facilities include:</p> <ul style="list-style-type: none"> <li>→ secure bicycle parking;</li> <li>→ locker facilities; and</li> <li>→ change rooms.</li> </ul>
Environmental planning instrument	<p>An environmental planning instrument (including a state environmental planning policy or local environmental plan but not including a Development Control Plan) made, or taken to have been made, under Part 3 of the Environmental Planning and Assessment Act 1979 and in force.</p>



Term	Definition
Floodplain	An area of land which is subject to inundation by floods up to and including the probable maximum flood event, that is, flood prone land.
Greater Sydney	The local government areas within the boundary shown on the map in the Greater Sydney Region Plan and Schedule 1 of the Greater Sydney Commission Act 2015.
Green Grid	The network of high-quality green spaces and tree lined streets that supports walking, cycling and community access to open spaces. It will provide cool, green links throughout the Aerotropolis and connect more broadly to the Western City District and Greater Sydney.
Green infrastructure	the network of green and blue spaces which includes waterways, bushland, parks, open spaces and tree canopy that are strategically planned, designed and managed to support a good quality of life in an urban environment.
Growth Area	Identified by the NSW Government as major greenfield development or urban renewal areas.
Habitat	Includes: → an area periodically or occasionally occupied by a species or ecological community, and → the biotic and abiotic components of an area.
Hazardous material	Materials that have the potential to pose a significant risk to human health, life or property, or to the biophysical environment. These may include materials that are radioactive, flammable, explosive, corrosive, oxidising, asphyxiating, bio-hazardous, toxic, pathogenic, or allergenic. Compressed gases and liquids or hot materials that may be hazardous in specific circumstances may also be included.
Integrated water cycle management	An approach to the management of water that considers aspects of water including rainwater, stormwater, groundwater, water supply and use, reuse and treatment.
Irrigation	The supply of water to land or crops to help growth, typically by means of channels.
Local Centre	Smaller-scale places that vary from a few shops on a corner to a vibrant main street and generally serve a local population.
Local Environmental Plan (LEP)	Defined in the EP&A Act. Guides planning decisions in local government areas through zoning and development controls.
Master Plan	An optional plan created under the Aerotropolis SEPP for large sites or landholdings of 100 hectares or more.
National Airports Safeguarding Framework (NASF)	National land use planning framework to improve community amenity by minimising aircraft noise- sensitive developments near airports and improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions on various safety related issues.
Obstacle Limitation Surface (OLS)	Designed to protect aircraft flying in visual conditions close to an airport by defining a volume of airspace to be protected from development, primarily modelled on the layout and configuration of proposed runways.
Performance outcome	A general statement of the means of achieving the intent of the applicable objectives of this development control plan.
Peri-urban lands	Land for agriculture undertaken in places on the fringes of urban areas.
Permeable surface	A surface that permits or facilitates the infiltration or penetration of water such as grass, landscaping or porous paving.



Term	Definition
Precinct planning	Identifies the development intent and development capacity across a precinct by allocating land uses, densities, housing types, built form, infrastructure and environmental and open space.
Private open space	same meaning as in the Standard Instrument - Principal Local Environmental Plan. an area external to a building (including an area of land, terrace, balcony or deck) that is used for private outdoor purposes ancillary to the use of the building.
Procedures for Air Navigation Services – Aircraft Operations Surfaces (PANS-OPS)	The primary surface for protecting aircraft operating under non-visual (instrument guided) conditions generally located above the OLS. Separate procedures for each runway and for the type of navigation system being used and the multiple surfaces are combined to form the PANS OPS.
Public domain	Any publicly or privately owned space that can be accessed and used by the public and/or is publicly visible.
Public safety area	a designated area at the end of an airport runway within which development may be restricted in order to control the number of people on the ground at risk of injury or death in the event of an aircraft accident on take-off or landing.
Public space	Includes parks, green spaces, plazas, libraries, streets, landscapes, museums, and public transport.
Remediation	removing, dispersing, destroying, reducing, mitigating or containing the contamination of any land; or eliminating or reducing any hazard arising from the contamination of any land (including by preventing the entry of persons or animals on the land).
Ride and car sharing	An arrangement in which a passenger travels in a private vehicle driven by its owner, for free or for a fee.
Riparian corridor	The channel which comprises the bed and banks of a watercourse (to the highest bank) and the vegetated riparian zone adjoining the channel.
Road reserve	Includes the following components: → footway; → kerb and gutter; → road carriageway; and → ancillary items to any of the above - any stormwater drainage asset, road/street furniture, edging, lighting, poles, services, signage etc.
Salinity	The salt content in water or soil.
Signage	Any sign, notice, device, representation or advertisement that advertises or promotes any goods, services or events and any structure or vessel that is principally designed for, or that is used for, the display of signage, and includes any of the following: a) an advertising structure; b) a building identification sign; and c) a business identification sign; but does not include a traffic sign or traffic control facilities.
Solar access	The ability of a building, part of a building or open space to continue to receive direct sunlight without obstruction from other surrounding buildings or impediments, not including trees.



Term	Definition
State Environmental Planning Policy (SEPP)	Environmental planning instruments that address planning issues of State significance.
State Environmental Planning Policy (Sydney Region Growth Centres) 2006	The environmental planning instrument which sets controls for the North West and South West Growth Areas of Sydney.
STEM (science, technology, engineering and mathematics)	An approach to learning and development that integrates the areas of science, technology, engineering and mathematics.
Stormwater	Untreated water that originates from rainfall or snow/ice melt and soaks into the ground (infiltrate), is held on the surface and evaporates, or runs off to streams, rivers or other water bodies (surface water).
Strategic centre	Characterised by a high proportion of knowledge- intensive jobs, existing or proposed major transport gateways and increased economic activity.
Streetscape	The character of a street and its close surrounds defined by the spatial arrangement and visual appearance of built and landscape features when viewed from the street.
Threatened species	a) a critically endangered species, an endangered species or a vulnerable species listed in Schedule 1 of the Biodiversity Conservation Act 2016; or b) a listed threatened species within the meaning of the Environment Protection and Biodiversity Conservation Act 1999.
Tributary	A river or stream flowing into a larger river or lake.
Upper South Creek Advanced Water Recycling Centre	A new Sydney Water facility that will collect and treat wastewater from the Aerotropolis and South West Growth Area. It will produce advanced quality treated water and provide for a wide range of re-use and substitution opportunities including supplying water for agriculture and environmental flows. It will also support the Circular Economy via the production of renewable energy and bioresources.
Urban heat island effect	An agglomeration of hard and dark-coloured surfaces such as roads and roofs which cause excessive localised warming.
Urban typologies	Precinct-scale snapshots of various forms of urban development incorporating built form, roads and subdivision pattern and open space.
Variation statement	A written statement accompanying a DA demonstrating how the objectives and relevant control and/or performance outcome will be achieved if an alternative to the 'benchmark solutions' is proposed.
Waterway	the whole or any part of a watercourse, wetland, waterbody (artificial) or waterbody (natural).
Western Economic Corridor	New economic agglomerations around the Western Sydney International (Nancy-Bird Walton) Airport, including the Aerotropolis.
Western Parkland City	Broadly, Penrith, Liverpool, Campbelltown, Hawkesbury, Wollondilly, Camden, Fairfield and Blue Mountains LGAs, anchored around Liverpool, Greater Penrith and Campbelltown–Macarthur, with the new Airport and Aerotropolis geographically at its centre.
Western Parkland City Authority (WPCA)	A NSW Government body (formerly the Western City & Aerotropolis Authority) established to facilitate the delivery of the Western Parkland City. The WPCA works across all three levels of Government to jointly plan, design and deliver the best possible outcomes in infrastructure, liveability, investment attraction, job growth and sustainability.



Term	Definition
Western Parkland City Metropolitan Cluster	Comprises the Aerotropolis, Liverpool, Greater Penrith and Campbelltown–Macarthur.
Western Sydney Aerotropolis	Encompasses 11,200 hectares of land roughly bounded by the Warragamba pipeline to the north, Kemps Creek to the east, Bringelly Road to the south and the future Outer Sydney Orbital Road to the west.
Western Sydney Aerotropolis Plan (WSAP)	A strategic plan that provides the vision, principles and planning framework for the Western Sydney Aerotropolis.
Western Sydney Airport	A Commonwealth business enterprise established in August 2017 to build the new Airport.
Western Sydney International (Nancy-Bird Walton) Airport	The declared airport site located on approximately 1,780 hectares of land at Badgerys Creek. The airport will be developed in stages and will ultimately comprise two parallel runways serving approximately 82 million passengers annually. The Airport will operate 24/7 without a curfew.
Western Sydney Planning Partnership	A local government-led initiative comprising of representatives of all eight Western Parkland City councils as well as Blacktown Council, and representatives from the NSW Department of Planning, Industry and Environment, Transport for NSW, Sydney Water and the Greater Sydney Commission.
Wianamatta-South Creek Catchment	Includes most of the Cumberland Plain of Western Sydney and is a defining central element of the Western Parkland City and the Aerotropolis.





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