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Atlas
Economics

JMD design



Brookvale Structure Plan Implementation

Urban Design and Public Domain Report



'Gura Bulga'

Liz Belanjee Cameron

'Gura Bulga' – translates to Warm Green Country. Representing New South Wales.

Colliers Urban Planning acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to land, waters and culture.

We acknowledge the Gadigal people, of the Eora Nation, the Traditional Custodians of the land where this document was prepared, and all peoples and nations from lands affected.

We pay our respects to their Elders past, present and emerging.

In supporting the Uluru Statement from the Heart, we walk with Aboriginal and Torres Strait Islander people in a movement of the Australian people for a better future.

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1. Executive Summary

The Brookvale Structure Plan sets the vision for Brookvale as a Strategic Centre and guides the future land use composition of the area which respond to its economic, transport, social and environment context.

Forming part of the Brookvale-Dee Why Strategic Centre, Brookvale is one of Northern Beaches Council's key employment-based centres. Brookvale supports many key industries, leading in retail trade with a recent rise in creative industries.

In 2015, Northern Beaches Council commenced a process to comprehensively plan for the future of Brookvale, with the Draft Brookvale Structure Plan being publicly exhibited in 2017. A number of issues were raised from the 113 submissions received during the exhibition, however the highest number of submissions related to concerns regarding traffic and transport, housing density and affordability.

In November 2023, the Brookvale Structure Plan was endorsed by Northern Beaches Council (Council) which aims to shape the future development of Brookvale over the next 15 years. Council has since commenced work on implementing the Structure Plan which involves preparing technical studies to support its Planning Proposal and updates to its Development Control Plan (DCP) and Contributions Plan.

Purpose of this Report

This Urban Design and Public Domain Report seeks to recontextualise the Brookvale Structure Plan work and to address changes in the urban development and planning context are summarised below:

- Increased feasibility hurdles for development within greater Sydney over the past years. This requires the consideration of higher densities to unlock development and support the aspiration for more affordable housing in Brookvale.
- NSW Government's commitment under the National Housing Accord to deliver 377,000 new well-located homes across the state by 2029. This has informed the establishment of 5-year targets for LGAs across greater Sydney, with Northern Beaches LGA expected to support 5,900 new completed homes by 2029.
- Additional capacity available in the transport network to support population growth beyond what was planned for in the Brookvale Structure Plan. The potential for additional capacity for growth has been verified by the initial findings of the Bitzios transport study, with the potential to support approximately 2,900 homes (an increase of 1,550 from the 1,350 homes set out by the Structure Plan).
- The need for additional open space in response to the expected increase to population in the Brookvale Precinct.
- During the preparation of this report, the Warringah Mall site lodged a State Significant Development (SSD) application through the Housing Development Authority (HDA).

The following three reports have been prepared concurrently whilst also been informed by a long list of technical studies:

1. Urban Design and Public Domain Report (Colliers Urban Planning and JMD Design)
2. Planning Justification Report (Colliers Urban Planning)
3. Affordable housing Viability Assessment (Atlas Economics)

The technical studies that have been considered throughout this report include:

1. Strategic Bush Fire Advice Report (Meridian Urban, 2024)
2. Preliminary Site Investigation - Contamination (Epic Environmental, 2024)
3. Indigenous and Non-Indigenous Heritage Report (GML Heritage, 2024)
4. Heritage Interpretation Strategy (GML Heritage, 2024)
5. Noise Assessment (Rodney Stevens Acoustics, 2024)
6. Transport Strategy (Bitzios Consulting, 2026)
7. Water Management Strategy (Alluvium Consulting, 2025)
8. Demographic Analysis and Social Infrastructure Peer Review and Implementation Strategy (Mecone, 2024-2025)
9. Utilities Capacity Assessment (SMEC, 2025)
10. Open Space and Recreation Strategy (Cred Consulting, 2025)
11. Greening Strategy (Spackman Mossop Michaels, 2025)



Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  B-Line Stop

2. Brookvale as a Place

This chapter defines Brookvale as a place and establishes its existing character through its regional context as part of the Northern Beaches, its demographics, and its rich history.



2.1 Regional Context

The Brookvale Structure Plan concerns 249 hectares of land centred in the suburb of Brookvale in the Northern Beaches Local Government Area. Brookvale is strategically located within the Northern Beaches Local Government Area. As identified within the Greater Sydney Region Plan (2018) the suburb forms part of the Brookvale - Dee Why strategic centre, contributing to a significant portion of employment for the Northern Beaches.

While Dee Why generally consists of higher density residential uses, supported by local shops and retail, Brookvale currently functions primarily as an employment centre, with a large industrial area providing niche manufacturing, urban services and a mix of creative and wholesale industries. Additionally, Warringah Mall also provides a large portion of retail for the Northern Beaches community.

The suburb is located in an area of high amenity, within walking and driving distance of regional green space such as Allenby Park, Beacon Hill Reserve, Greendale Creek Sportsfields, Warringah Golf Club and South Curl Curl and Freshwater Beach.

The investigation area is bisected by Pittwater Road, which connects it to other strategic and local centres on the Northern Beaches and throughout Sydney. Warringah Road, to the north of the suburb, provides additional connectivity to Frenchs Forest, Chatswood and Sydney's broader west.

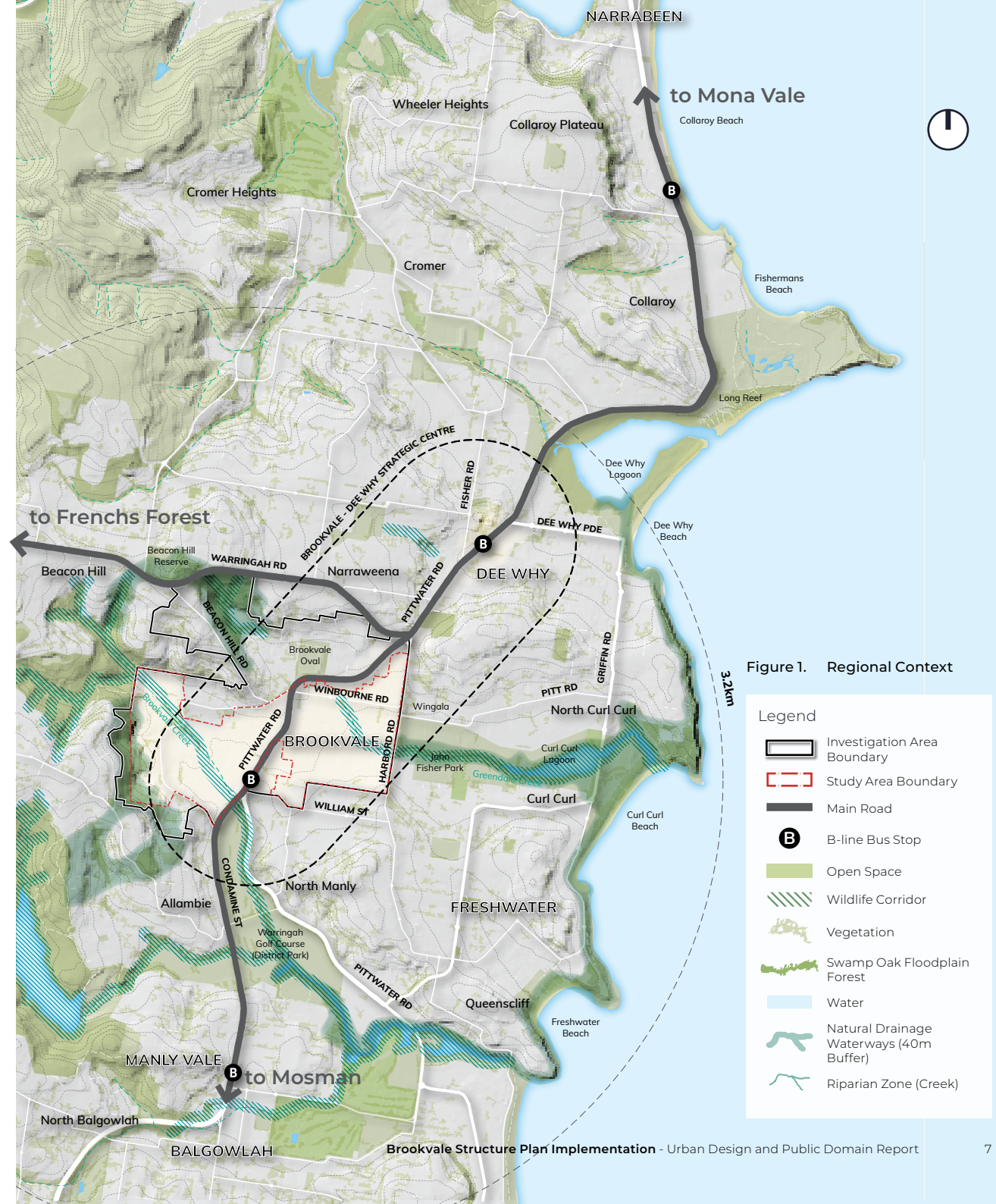
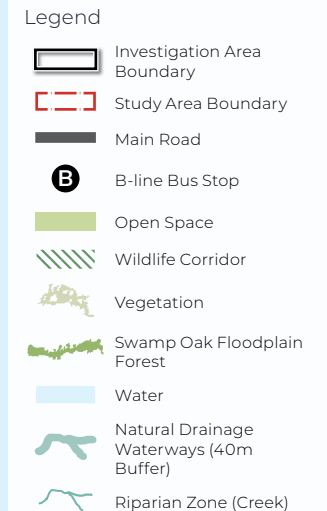


Figure 1. Regional Context



2.2 Key Demographics

In 2016, the population of the investigation area was 3,826 persons. This has since increased by +292 persons to reach 4,118 residents in 2021.

Data extracted from the 2016 and 2021 ABS Census:

High household incomes with a median household income of

\$116,460
compared to

\$108,750
for Greater Sydney.

An age profile similar to Greater Sydney with a median age of

37
compared to

37.3
Greater Sydney

Retail trade, Health care, and professional services

were the main industries of employment for residents. Resident employment profile is similar to the Greater Sydney average.

Most residents worked in white collar jobs at

74.2%
which is comparable to
Greater Sydney at

76.8%

Fewer family households with

65.6%
of households being
a family household
compared to

72.6%
in Greater Sydney.

Most family households were couple families with children. Brookvale area also had a much higher share of lone person households at

29.9%
compared to

23.3%
in Greater Sydney.

Slightly lower ownership share with

57.6%
of dwellings owned
with a mortgage or
outright, compared to

62.3%
in Greater Sydney.

High density living with a lower share of

(27.3%)
Separate Houses and

(56.4%)
higher share of Flat,
Units or Apartment
compared to

56.1% & 30.7%
in Greater Sydney.

Some of the key trends between the 2016 and 2021 census, include:



Median household income increased from \$98,170 in 2016 to \$116,460 in 2021.



Dwelling density increased with a reduction in the share of semi-detached dwellings and a corresponding increase in flat, unit or apartments. Separate houses remained unchanged, which indicates that residential development has been primarily concentrated in existing areas of density.



Dwelling ownership has decreased with a reduction in the share of dwellings owned with a mortgage and a corresponding increase in the share of rented dwellings.



Housing costs have increased with an increase in the median monthly mortgage from \$2,340 in 2016 to \$2,792 in 2021. Median weekly rents have increased from \$520 to \$559. However, the share of median household income has decreased for rented dwellings with households contributing 24.9% of their income in 2021 compared to 27.5% of their income in 2016. For mortgages, this percentage has increased by 0.2% from 2016 to 2021.



Share of residents in white collar occupations has remain unchanged with managers and professions remaining the dominant occupation of employment for residents.

2.3 Population Growth

The Investigation Area is located in the Freshwater - Brookvale Statistical Area. The population of the area was 22,014 persons in 2021, this is expected to increase by +746 persons to reach 22,760 persons in 2041.

The following data and graphs are extracted from NSW Population Projections 2024 (NSW Planning, 2024):

Freshwater - Brookvale in 2041 has a projected population of:

22,760
with an increase of

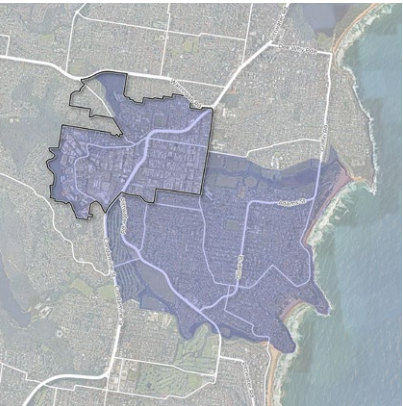
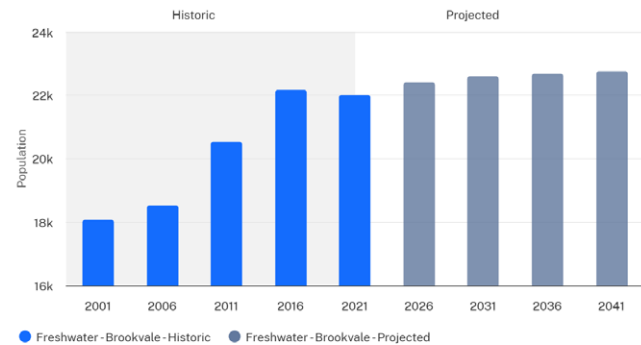
+746
from 2021.

From 2021 to 2024 Freshwater - Brookvale has an projected annual population increase of:

+0.2%
compared to

+1.1%
for NSW.

The chart below shows the change over time for Freshwater - Brookvale. Historical population (2001-2021) alongside the projected population (2022-2041). The total population within this area in 2021 was 22,014 and is projected to remain stable in the next 20 years.



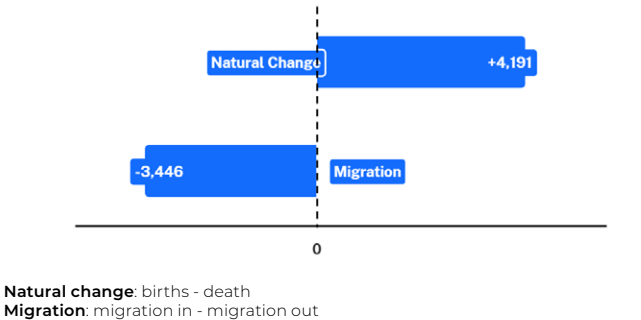
Legend

Investigation Area Boundary

Freshwater - Brookvale Statistical Area

The population forecast is likely to change through the implementation of the Brookvale Structure Plan. Further information is available in the Brookvale Demographic Analysis Report produced by Mecone (2024).

The diagram shows what factors are predicted to influence population change for Freshwater - Brookvale. Natural change is set to increase the population by 4,191 while migration is expected to reduce the population by 3,446 between 2021 and 2041.



2.4 Historical Overview

First Nations Heritage

Aboriginal people have lived in Australia for at least 60,000 years, with Brookvale located on the traditional lands of the Garigal (or Caregal) people, one of several First Nations groups of the Northern Beaches.

The landscape and landform features of the area historically informed how Country was understood and experienced. However, extensive modification since European settlement has significantly altered the suburb, disturbing much of the investigation area. Despite these changes, two registered AHIMS sites remain within the investigation area, comprising a rock engraving and hand stencils. Both sites are located within or adjacent to the former brickworks site in the northern part of Brookvale. Additional Aboriginal art sites are also recorded in the surrounding area, reflecting the continued cultural significance of the landscape.

Key Takeaways

Incorporate the recommendations from the Heritage Interpretation Strategy (GML Heritage, 2024):

- First Nations Heritage should be considered as part of any future development within the investigation area through community consultation.
- Develop interpretive content based on historic and Aboriginal values as well as continuing connection to Country. Including key public artworks that incorporate Aboriginal rock carvings through graphic motifs and impactful interpretive devices.
- AHIMS sites must be retained.

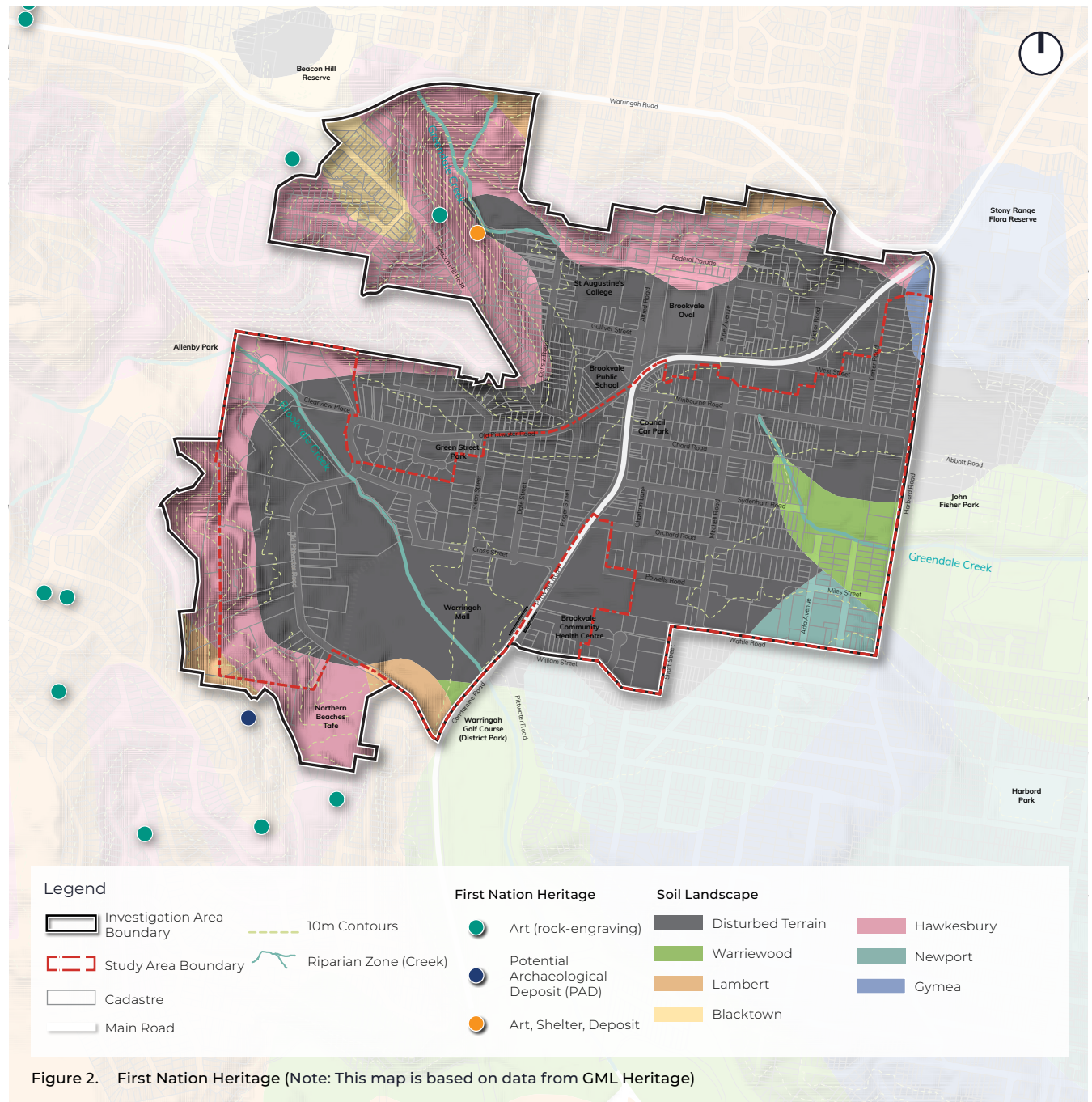


Figure 2. First Nation Heritage (Note: This map is based on data from GML Heritage)

Non-Indigenous Heritage

Brookvale was one of the earliest towns established on the Northern Beaches. Originally used for pastoral land, market gardens and supporting dwellings throughout the 19th century, the town grew as a result of the installation of a tram connection between Brookvale and Manly in 1910. This permitted significant growth and the establishment of industries such as Brookvale Brickworks and Manly Brick and Tile Company.

Brookvale's strategic location, civic function, schools and amenities made the town the centre of civic life in the 1920s for the Warringah Shire. However, major changes as a result of the County of Cumberland Planning Scheme changed Brookvale from an emerging town to an industrial precinct. Land uses shifted from market gardens and streets to factories and light industries. Brookvale was noted as the main industrial zone in the Northern Beaches.

Warringah Mall, notably one of the largest big-box retail developments in Australia opened in 1963, drawing retail trade away from the retail precinct of Manly. Industrial developments also continued to grow and transform, with a trend from heavy industries to car yards, office parks, warehouses, breweries and coffee roasters.

Key Takeaways

Incorporate the recommendations from the Heritage Interpretation Strategy (GML Heritage, 2024):

- Celebrate the current success of Brookvale's industrial identity and promote its historical character and themes through public art and interpretive devices.

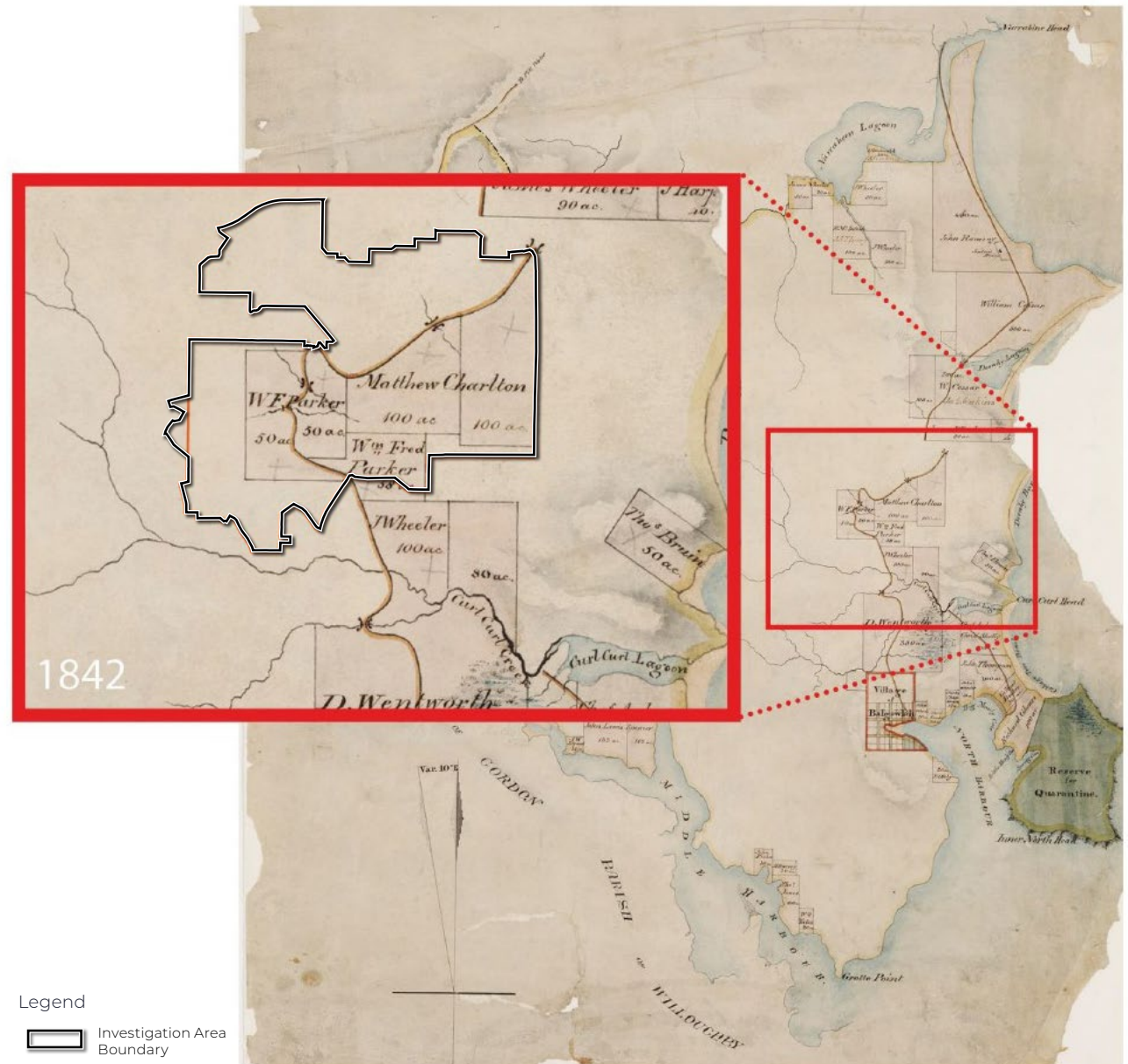
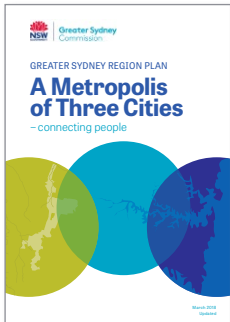


Figure 3. Non-Indigenous Heritage (Source: GML Heritage)

3. Strategic Context

A number of existing State and local strategic planning documents and policies provide guidance and direction for the future planning of Brookvale. The following policies and their relevant priorities and actions have been considered in the development of the Structure Plan. Additional policies since the release of the Structure Plan have been reviewed and additional changes to the Plan have been identified.

3.1 Planning Policy Summaries



Greater Sydney Region Plan and North District Plan

The Greater Sydney Region Plan establishes a 40-year vision to 2056 for Greater Sydney to be a metropolis of three cities, enabling most people in Greater Sydney to get to their nearest strategic centre within 30 minutes by public transport. The Region Plan is supported by five district plans that guide the implementation of the Region Plan at a district level and act as a bridge between regional and local planning. Brookvale is located within the North District and is included in the North District Plan.

The North District Plan has identified that an additional 92,000 homes will be needed in the district by 2036, while also establishing a baseline target of 23,000 jobs for the Brookvale-Dee

Why area by 2036 (from 3,000 in 2016). The more ambitious target is for 26,000 jobs.

The District Plan identifies Brookvale-Dee Why as being a strategic centre, recognising its current role in supporting the greatest number of jobs in the Northern Beaches. Actions put forward to strengthen the strategic centre, include:

- Maintaining the mix of uses so that Brookvale-Dee Why continues to perform strongly as a well-balanced, self-sustaining combined centre.
- Encouraging and supporting improvements to Warringah Mall and better integrating it within the fabric and life of Brookvale-Dee Why.
- Recognising and enhancing the economic and employment opportunities along Pittwater Road and encouraging revitalisation along the commercial strip.
- Promoting walking, cycling and public transport to Warringah Mall, the Brookvale industrial area and Dee Why.
- Encouraging the establishment of new, innovative and creative industries in the Brookvale industrial area.
- Encouraging new lifestyle and entertainment uses to activate local streets in Brookvale-Dee Why.
- Improving connections between Brookvale-Dee Why and the Northern Beaches Hospital at Frenchs Forest.

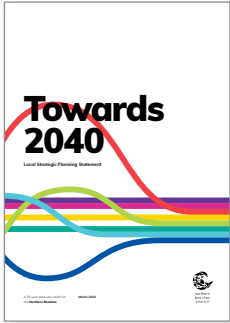


Future Transport and mobility

The Future Transport Strategy 2056 sets the vision and direction for NSW transport investment by providing a comprehensive plan that emphasises the creation of connected 30-minute cities and convenient 15-minute neighbourhoods. It includes a movement and place framework to ensure that transport supports the increased accessibility and reduced travel time for residents whilst enhancing the character of the places and communities.

The key guiding principles for future transport that are relevant to the Brookvale Structure Plan, include:

- Successful places: The liveability, amenity and economic success of communities and places should be enhanced by transport.
- Accessible services: Transport should enable everyone to get the most out of life, wherever they live and whatever their age, ability or personal circumstances.



Towards 2040 - Northern Beaches Local Strategic Statement

Towards 2040 (LSPS) sets a 20-year vision and supporting planning priorities and actions for land use planning in Northern Beaches Council.

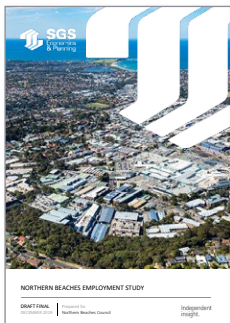
The LSPS recognises the role of Brookvale as a strategic centre which will continue to accommodate most of the LGA's jobs. Specifically, Planning Priority 24 identifies Brookvale as an employment and innovation centre which will continue to support industrial, commercial, retail, service and education sectors, but also encourages opportunities to grow high skilled employment and innovation-led change across its existing base of urban services, manufacturing, distribution, automotive and construction industries. While renewal

opportunities will support Brookvale as a place for jobs, new housing will be provided subject to infrastructure such as B-Line improvements, public transport to Chatswood and an express bus to Manly.

To support the future planning of Brookvale, the LSPS identifies the following principles:

- Support Brookvale as an employment-based centre.
- Establish a town centre-activity point and open space outside of Warringah Mall
- Support the expansion of Warringah Mall and integrate it with surrounding built form
- Bring life back to the streets, including revitalisation of the main commercial strip

- Ensure appropriate interfaces between different land uses.
- Enhance tree canopy and provide green links to Brookvale Park, Warringah Mall and the B-Line.
- Enhance Brookvale's identity and define gateways to create a sense of arrival
- Improve public transport and regional cycle networks to Sydney CBD, Frenchs Forest, Mona Vale and Manly.
- Support the night-time economy, creative and innovative industries and public art.
- Preserve the industrial integrity of the industrial zoned land.



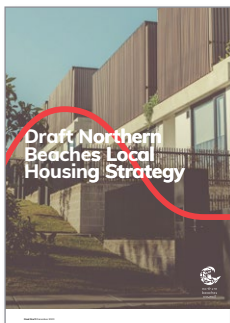
Northern Beaches Employment Study

The Northern Beaches Employment Study is part of the framework to support the Local Strategic Planning Statement - Towards 2040, informs updates to the Local Environmental Plan and advises non-planning recommendations to an Economic Development Plan. It provides an analysis on the LGA's opportunities and constraints for employment lands.

Key planning actions identified by the Employment Study that are relevant to the Brookvale Structure Plan, include:

- Improve the functionality of Brookvale through integrating Warringah mall and surround land uses
- Develop a focal point for the centre with protecting and managing the right mix of industrial and urban service lands.
- Concentrate commercial floorspace in the commercial core

- Identify the likely locations to support commercial growth and prevent the commercial conversion in industrial zones
- Leverage the emerging creative manufacturing scene
- Refocus the role of Brookvale prioritising high skilled employment



Northern Beaches Local Housing Strategy

The Northern Beaches Local Housing Strategy (LHS) sets a vision for the supply of future housing to meet the needs of the growing community. Importantly, the LHS looks at the mix of housing in the Northern Beaches Local Government Area (LGA) today, and at the kind of housing that will be needed in the future.

The LHS proposes a range of actions in five priority areas, including:

- Priority 1: Housing targets - meet District Plan and 6-10 year housing target.
- Priority 2: Detailed planning for centres - establish sufficient capacity to accommodate housing demand around existing centres
- Priority 3: Social and affordable housing - encourage the provision of affordable housing and plan for boarding house in appropriate and accessible locations

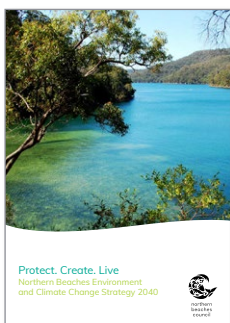
- Priority 4: Precinct sustainability and housing - investigate and support sustainable housing precincts
- Priority 5: Planning for seniors housing - incentivise the provision of seniors housing in the right locations.

Specifically to Brookvale, the following directions are identified by the LHS to inform the future planning of this area:

- Concentrated medium and higher-density urban renewal should occur within 1km around accessible centres along the B-line corridor.
- It is noted that Brookvale and Dee Why are considered priority renewal areas in support of future housing development.
- Brookvale is to be prioritised as the initial focus for urban renewal. However, the strategy highlights that as the LGA's largest employment centre, it is important that

employment land uses are retained in the Brookvale area.

- Potential additional capacity of 840 – 1,240 dwellings if the Centres Renewal Framework is applied to Brookvale (it should be noted that this covers a broader area than the study area for the revised Brookvale Structure Plan)
- Brookvale is to provide a medium-high density housing supply that complements the employment centre.
- Brookvale may be able to accommodate some more high-density residential and mixed-use development (with ground-floor retail).
- Brookvale is to be prioritised as a catalyst for renewable energy innovation.



Northern Beaches Environment & Climate Change Strategy 2040 (Protect.Create.Live)

Northern Beaches Environment and Climate Change Strategy 2040 is our plan for a healthy and diverse natural environment that is respected, supported and celebrated. Notably, the strategy recognises the opportunity to use our land use planning instruments and controls to design and build our neighbourhoods well, so they fit within our natural environment, rather

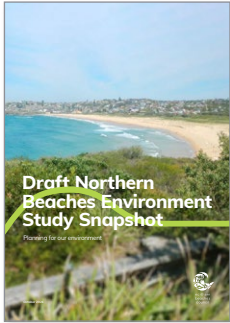
than damage or destroy it, and reduce resource use.

The Strategy defines key goals and actions that will inform how Council plans for adaptive and resilient communities in the LGA. The following goals will be important for the future planning of Brookvale:

- Our homes, work places, buildings, infrastructure and neighbourhoods are designed, built and maintained with low

environmental footprints, to improve liveability and support community resilience.

- The built environment integrates nature and connects our community through green and blue networks to support active travel and healthy lifestyles. We design our community around nature.
- Our community is actively working towards being energy, water, waste and transport smart so that we meet net zero carbon emissions by 2050.

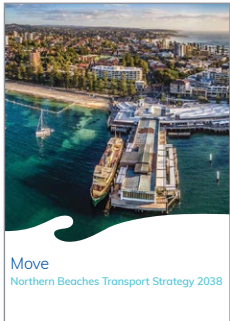


Northern Beaches Environment Study

The Draft Northern Beaches Environment Study is part of the framework to support the new Local Environment Plan, Development Control Plan and other development related activities. The Study recommends actions that will help to deliver the commitments within the Local Strategic Planning Statement - Towards 2040 and the Environment and Climate Change Strategy, 2040.

Key planning actions identified by the Environment Study that are relevant to the Brookvale Structure Plan, include:

- Review, develop and integrate planning controls into the new planning framework that includes green infrastructure that provides for water treatment and retention, water sensitive urban design, urban cooling, ecosystem services and amenity and integrate it into built, landscaped and natural environments in strategic centres, employment hubs and areas subject to urban intensification.
- Ensure built form controls maximise landscape open space at ground level, and where appropriate at upper levels.
- Implement a best practice Urban Tree Canopy Plan for the LGA that includes tree canopy targets and prioritises local native tree species. Short term Incorporate within the new planning framework requirements for landscape open space, tree protection and replacement requirements.
- Develop and integrate planning controls into the new planning framework that require building materials that help to mitigate urban heat.



Move - Northern Beaches Transport Strategy 2038

The Northern Beaches Transport Strategy provides a long-term vision (20 years) for transport on the Northern Beaches in response to the community's priorities. It outlines key Future Directions for transport infrastructure, reducing congestion and changing travel behaviour.

The Strategy is structured on five Themes with each having up to eight Future Directions. These themes, include:

- Accessible and Liveable Places - Create and enhance "Places for People" that are integrated with public transport, creating vibrant, connected places with wide footpaths, safe cycling options and where the car is not the first option.
- Active Travel - Prioritise smart, active travel network improvements (through technology, end of trip facilities and way-finding signage). Expand footpath and shared path networks to improve connectivity and safety, making walking and cycling attractive alternatives to the car.
- Public Transport - Partner with the NSW Government to implement a Bus Rapid Transit service by 2020 between Dee Why, Frenchs Forest and Chatswood; followed by services between Mona Vale and Macquarie Park. Plan for a high-frequency mass transit service on the Northern Beaches in the longer term.
- Efficient Road Network - Support the delivery of the Beaches Link Tunnel subject to the inclusion of public transport and overall impact on our local residents.
- Smart Parking Management - Develop local parking management plans for town and village centres including higher turnover parking in areas of high demand.



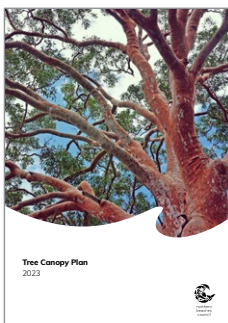
Northern Beaches Resilience Strategy (Withstand.Adapt.Thrive)

Northern Beaches Resilience Strategy outlines a vision and actions for strengthening resiliency within the community when shocks or sudden challenges such as bushfires, economic challenge, diseases and pandemics occur. The Strategy establishes seven Strategic Directions to address these shocks and stresses and support a more resilient Northern Beaches.

The Strategic Directions identify key priorities and actions and creates a platform for collaboration and partnerships between the community, businesses, government agencies and non-government organisations. These priorities and recommendations focus on:

- building the self-sufficiency and capacity of our community
- capitalising on our strengths as a connected community
- providing support mechanisms that harness on our willingness to learn and adapt

- increasing awareness of current and emerging challenges, and
- implementing a range of mitigative and adaptive measures.



Northern Beaches Tree Canopy Plan (2023)

The Northern Beaches Tree Canopy Plan provides a holistic framework for the management of the tree canopy across the Northern Beaches LGA. The framework is primarily focused on council-managed land, and where possible, it seeks to enhance tree canopy retention and improvement on private land. Within this Plan, Brookvale is outlined as a key focus area due to its underperforming canopy cover of 21%, with prioritisation for increasing this in line with the NSW Government's objective of 40% urban tree canopy cover for metropolitan Sydney by 2036.

Key actions include:

- Continuing to plant 5,000 trees per year.
- Conduct an audit of trees in priority areas (Brookvale included).
- Measure tree canopy cover every four years.
- Implement an iconic tree register for public land.
- Raise awareness about tree planting programs.
- Improve tree diversity and health.

- Strengthen the local environment plan and development control plans to focus on retention and protection of tree canopy.
- Continue to investigate and act upon unauthorised activities that impact on the tree canopy, such as illegal vegetation clearing, unauthorised recreational trails and other environmental damage.
- Promote the importance of retention and protection of trees as part of the development application and tree removal process.



Northern Beaches Economic Development Strategy (2023)

The Northern Beaches Economic Development Strategy outlines the key economic challenges, opportunities, directions and critical issues that face local businesses and jobs within the LGA. Under this Strategy, Council seeks to establish an economic vision for the Northern Beaches that can support business and employment growth.

The Strategy highlights the following characteristics of Brookvale that represent its important economic role for the Northern Beaches:

- There is a wide mix of small businesses that cover the construction and automotive industries, small scale manufacturing, wholesale trade and professional services.
- Warringah Mall provides higher order retail and services, complemented by Northern Beaches TAFE, Brookvale Community Health Centre and the B-line bus stop.
- Businesses are attracted to the centre as a place to make noise and do things that are not suitable anywhere else. The resurgence

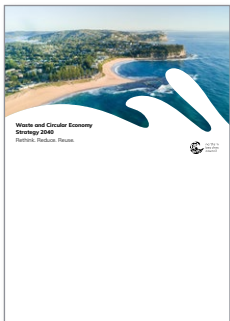
of the brewery scene in Brookvale, creative industries and specialist recreation functions, complement the centre's broader economic function while providing places for workers, visitors and nearby residents.

- Its city-serving industrial functions are essential and must be protected given the continued strong demand for industrial floor space and constrained supply elsewhere.
- Brookvale is a place of gritty industry, creativity and urban cool. It could be home to the next generation of innovative entrepreneurs to form a creative and innovation hub.
- Pittwater Road will maintain its mixed-use role, with new buildings up to eight storeys, continuing to support ground floor showrooms and home materials and creative and maker spaces.
- Industrial lands both east and west of Pittwater Road will be retained and proposed to increase building heights to four storeys to support modern industrialised floorspace.

- Brookvale's heritage as a place of innovation which could form part of a branding exercise as it welcomes more innovators and entrepreneurs.

Building on these characteristics, the Strategy outlines the following opportunities and actions:

- Commercial space - The LGA needs more office space to accommodate the growth of commercial enterprises. Provision of a commercial core is a strong focus for Brookvale to encourage more professional employment.
- Creative hub and local producers - A creative hub at Brookvale with marketing and other support services could foster and strengthen the emerging creative and cultural industry network and support other emerging hubs, such as Freshwater and Avalon, to encourage mentoring, partnerships and integrated supply chains.
- Establish Brookvale as a home for innovative and creative businesses with quality professional spaces, including co-working and innovation hubs.



Northern Beaches Waste and Circular Economy Strategy 2040 (Rethink. Reduce. Reuse.) (2024)

The Northern Beaches Waste and Circular Economy Strategy 2040 provides the framework and strategic direction to address the challenges and opportunities of shifting towards a more circular economy. The strategy seeks to deliver

economic prosperity, promote social cohesion, reduce greenhouse gas emissions, and protect the natural environment. In reference to land use and construction, the strategy seeks to implement the following initiatives:

- Improving local planning controls and guidelines by 2026 to enable public and private buildings and infrastructure to

be designed for longevity, reducing the need for raw materials and enabling future disassembly, reuse and recycling.

- Land use planning functions, including development controls and zoning, include suitable land or spaces for waste management or circular economy activities.

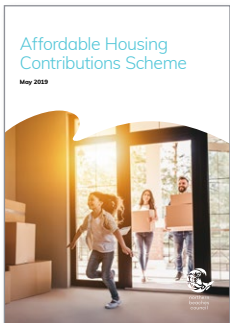


Northern Beaches Open Space and Outdoor Recreation Strategy and Action Plan (2022)

The Northern Beaches Open Space and Outdoor Recreation Strategy and Action Plan analyses the current provision of open space and recreation facilities and makes recommendations that guide how Council will continue to meet the recreational needs of residents and visitors over the next 15 years. The Strategy considers the changing community demographics, best practice guidelines and trends and benefits that are unique to the Northern Beaches as well as those documented in relevant literature.

Among more general responses including realising the full potential of existing open spaces, the Strategy outlines the following considerations for Brookvale:

- Any further growth in the Brookvale area will need to consider access to adequate quantity and quality of open space.
- There is a gap in Brookvale for local and neighbourhood play spaces within walking distance (400 - 800 m). Access to district play spaces remains sufficient.



Northern Beaches Affordable Housing Contributions Scheme

In May 2019, Council adopted its Northern Beaches Affordable Housing Contributions Scheme and is the primary mechanism for Council to levy for affordable housing (for areas of uplift) in the Northern Beaches LGA. Specifically, this allows Council to collect developer contributions to provide affordable housing either as complete dwellings or as an equivalent monetary contribution on the Northern Beaches.

The objectives of Council's Affordable Housing Contributions Scheme are:

- to set out how, why, where and at what rate development contributions can be collected for the purpose of affordable housing; and
- to provide local residents and key workers on low to moderate incomes with access to affordable rental accommodation to assist them to enter the private rental market or home ownership.

Under the current Affordable Housing Contributions Scheme, Council is committed to the aspiration to deliver a 10% affordable rental housing target for urban renewal areas. To investigate the capacity for future development to deliver affordable rental housing in Brookvale, feasibility analysis was undertaken to determine the level of affordable rental housing that could be delivered as part of the renewal of Brookvale.

3.2 Design Policy and Frameworks



Better Placed

The Office of the Government Architect (NSW) 2017

The Government Architect NSW has prepared Better Placed, an integrated design policy for the built environment of NSW that establishes principles to support better design and create good places within NSW. The policy also advocates the support of design excellence of future development to create better quality places.

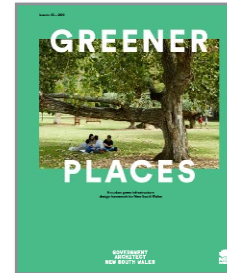
In this document, seven objectives for the built environment are identified:

- Better Fit - contextual, local and of its place
- Better Performance - sustainable, adaptable and durable
- Better for Community - inclusive, connected and diverse
- Better for People - safe, comfortable and liveable
- Better Working - functional, efficient and fit for purpose
- Better Value - creating and adding value
- Better look and feel - engaging, inviting and attractive
- Better Placed is part of a suite of documents that the NSW Government is preparing to advocate good design.

The document also advocates Design as a process and an outcome, that is constituted of three core collaborative steps - 'Discover', 'Create' and 'Deliver'.

The Brookvale Structure Plan through its implementation has the opportunity to be designed following these objectives and can deliver a high quality place for the Northern Beaches.

Recommendations will be made around built form, setbacks, heights and character that will help guide future development toward the Better Placed principles.



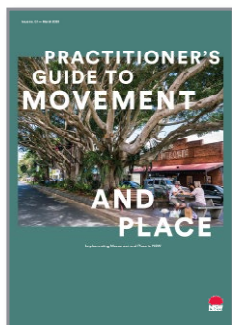
Greener Places

The Office of the Government Architect (NSW) 2017

The Government Architect NSW has prepared Greener Places to guide the planning, design and delivery of Green Infrastructure in urban areas across NSW. The vision for the policy is to establish a network of well-planned Green Infrastructure that will make NSW better connected, healthier and more resilient using the following principles.

- Integration – The principle of integrating green space with urban development and hard infrastructure (e.g. roads, storm-water drainage).
- Connectivity – promoting a network of high quality open spaces that connect with other areas of activity, such as town centres, public transport hubs, rivers, creeks and employment and residential areas. This aims to create a network of open space through the Central City District and Greater Sydney region.
- Multi-functionality - where design of green spaces provides a range of benefits in one area through careful planning. This may include the simultaneous function of green spaces for ecosystem, environmental and other services.
- Participation – where stakeholders are involved in the development and implementation of neighbourhood, local, district and regional Green Infrastructure policies.

The Brookvale Structure Plan implementation proposes two new open spaces integrated within areas of activity such as retail, commercial and community. The structure plan will consider green links, wildlife corridors and connectivity with the wider open space network.



Guide to Movement and Place

The Office of the Government Architect (NSW) 2020

The Guide to Movement and Place has been prepared collaboratively by Government Architect NSW (GANSW) and Transport for NSW (TfNSW) with input from a range of NSW Government agencies and local government representatives. The role of the guide is to provide a common structure for place-based transport and city and town planning across NSW.

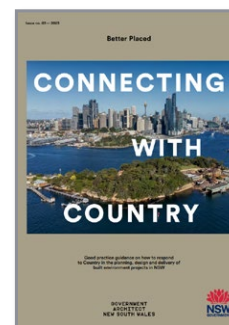
The objective of Movement and Place is to achieve roads and streets that:

- 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.

The Guide to Movement and Place is especially important for Brookvale to assist in the analysis of place and understanding the relationship of movements types in the wider Northern Beaches Local Government Area.

It responds to the existing public transport movement including the B-line, ensuring its Warringah Mall stop is integrated within the future vibrant town square.

In addition, the Brookvale Structure Plan introduces two new open spaces that are connected to existing and proposed open spaces through active transport links.



Connecting with Country Framework

The Office of the Government Architect (NSW) 2023

The Connecting with Country Framework was prepared by Aboriginal professionals within the NSW Government in collaboration with Aboriginal Traditional Custodians and knowledge holders to inform planning, design, government infrastructure, and the delivery of the built environment

The framework offers guidance for projects to support the health and wellbeing of Country by valuing, respecting, and being guided by Aboriginal people, who know that if we care for Country – it will care for us.

The three long term strategic goals in the Connecting with Country Framework include:

- Reduce the impact of natural events (bushfires, flooding, etc.)
- Value and respect Aboriginal Cultural knowledge (co-leading design)
- Ensure the country is cared for appropriately

These three long-term strategic goals serve as the main aspirations for Brookvale. Responding to flooding and ensuring Brookvale remains resilient is the starting point, shaped by the potential opportunities that are driven by place-led design approaches.

3.3 Strategic Directions

The existing state and local strategic planning documents provide a clear direction for the future of Brookvale. Overall, the key strategic directions for Brookvale are:

The strategic directions identified include:

Strategic Direction 1

Grow Brookvale as a true strategic employment-based centre through providing opportunities for high skilled employment and innovation-led change whilst maintaining the existing urban services, manufacturing, distribution, automotive and construction industries.

Strategic Direction 4

Establish a civic centre open space in front of Warringah Mall to contribute to creating a great place to live and work for all ages and abilities. This should support various cultural and community functions, forming a vibrant hub of activity.

Strategic Direction 2

Create a commercial core that attracts jobs that match the skills of residents and supports new innovative businesses.

Strategic Direction 5

Facilitate the orderly expansion of Warringah Mall and future built form to create a genuine mixed use centre.

Strategic Direction 3

Deliver diverse affordable housing for all abilities and ages that cater for the changing needs of the population.

Strategic Direction 6

Protect and preserve the industrial integrity of the existing mix of industrial and urban service land.

3.4 Strategic Considerations

The following provides an outline of the recent strategic plans or studies that have been adopted following the Brookvale Structure Plan and provides an overview of new matters for consideration:

Future Transport Strategy 2056 (2022)

- Promote public transport and improve local opportunities for convenient, attractive and safe walking cycling and public transport connections to achieve a 30-minute city and 15-minute neighbourhood.

Northern Beaches Resilience Strategy 2040 (Withstand. Adapt. Thrive) (2022)

- Increase pervious surfaces and incorporate a water-sensitive urban design that minimises environmental degradation and improves the aesthetic and recreational appeal of Brookvale.
- Enhance Brookvale's canopy cover to combat the urban heat island effect, which disproportionately affects vulnerable populations including the elderly and those with chronic illnesses.
- Northern Beaches Open Space and Outdoor Recreation Strategy and Action Plan (2022)
- Deliver adequate quantity and quality of open space that is multifunctional and provides opportunities for people to connect to nature whilst addressing recreational gaps. This should include new green links that connect and enhance the local green grid surrounding the Precinct.
- Maximise landscape open space opportunities at upper levels of new development.

Northern Beaches Tree Canopy Plan (2023)

- Enhance tree canopy, diversity, health and other forms of green infrastructure to reduce the urban heat island effect within the Precinct.

Northern Beaches Economic Development Strategy (2023)

- Foster opportunities for creative and innovative industries that contribute to night-time activities for the young and culturally diverse population.
- Protect and preserve the industrial integrity of the existing mix of industrial and urban service land within Brookvale.
- Facilitate mixed-use development up to eight storeys along Pittwater Road, that continue to support ground-floor showrooms and home materials and creative and maker spaces.

Northern Beaches Waste and Circular Economy Strategy 2040 (Rethink. Reduce. Reuse.) (2024)

- Implement guidelines that prioritise sustainable construction methods that reduce the need for raw materials, and encourage future disassembly, reuse, recycling and circular economy activities.

4. Local Context

This chapter articulates our findings within the Investigation Area and lands on opportunities and constraints that have informed the Brookvale Structure Plan Master Plan.



4.1 Existing Land Use

Brookvale includes over 86ha of industrial zoned land, the largest consolidated area in the Northern Beaches LGA. To the east of Pittwater Road, land uses include small warehouses and wholesalers, manufacturing uses and boutique breweries and retail. Industrial lands to the west of Pittwater Road contains a mixture of larger warehouses and manufacturing businesses.

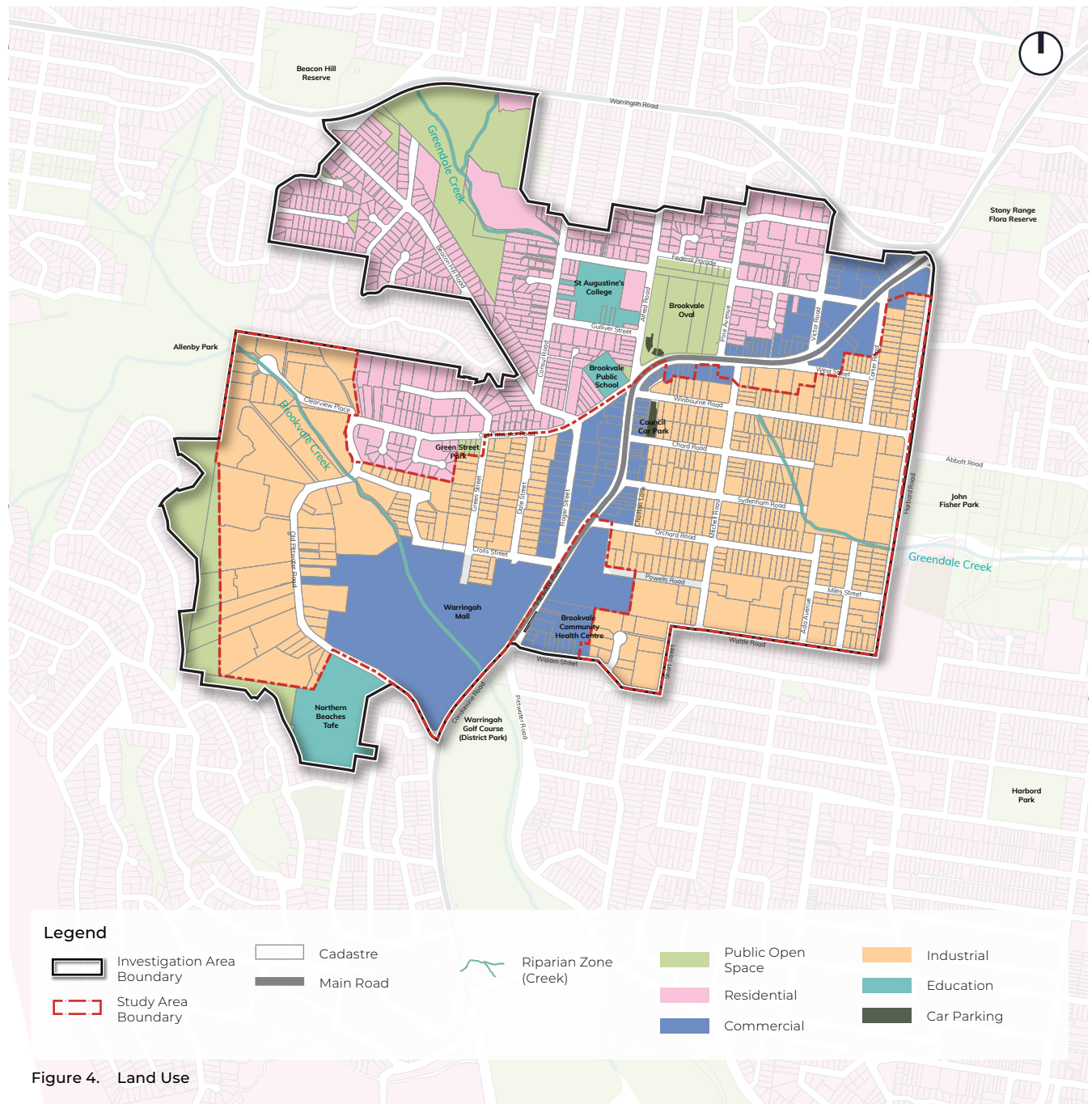
Commercial and retail uses are generally located fronting Pittwater Road, including small scale offices, food and beverage and retail uses. Warringah Mall anchors the south of the site, being the largest parcel of land within the study area.

Residential dwellings bound the north and south end of Brookvale with a mixture of supporting dispersed public open spaces and education facilities, such as Brookvale Park, Northern Beaches TAFE and St Augustine's College.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Upzone key areas along Pittwater Road to Mixed Use and allow for a diverse range of services that are in line with the vision for Brookvale.
- Establish minimum floor space requirements for non-residential land uses.
- Additional permitted uses for residential flat buildings, including light industrial and creative uses on the ground floor.





View of Pittwater Road with timed street parking within the bus lane. Retail and commercial development typology up to 2 storeys.



Aerial view of pedestrian bridge over Pittwater Road with 6-7 lanes of vehicular movement, including 2 bus lanes.



Aerial view of Westfield, Warringah Mall. Largest retail floor plate of 3-4 storeys with large parking areas.



View of a Car Dealership along Pittwater Road.



View of Charlton Lane from Sydenham Road, active loading zones and entrances of General Industrial zoned businesses.



View of business uses along Dale Street. Dominant character of the existing industrial area.



View of existing mixed use development at the corner of Roger Street and Old Pittwater Road.



View of 20 Dale Street, existing 3 storey office building within General Industrial zone providing a range of services.



Aerial view of Brookvale Oval located in Brookvale Park.

4.2 Block and Lot Pattern

Brookvale is characterised by a variety of lot sizes that range from small residential and commercial lots of 300m² to 600m² to the east and industrial lots of 750m² to 2000m² and more to the west.

The east of the investigation area is defined by a fine grain lot pattern as a result of former plans zoning the land for residential use. Existing industrial lots framing Pittwater Road to the west are significantly large and irregular shaped. Westfield Warringah Mall is located on the largest lot in the study area.

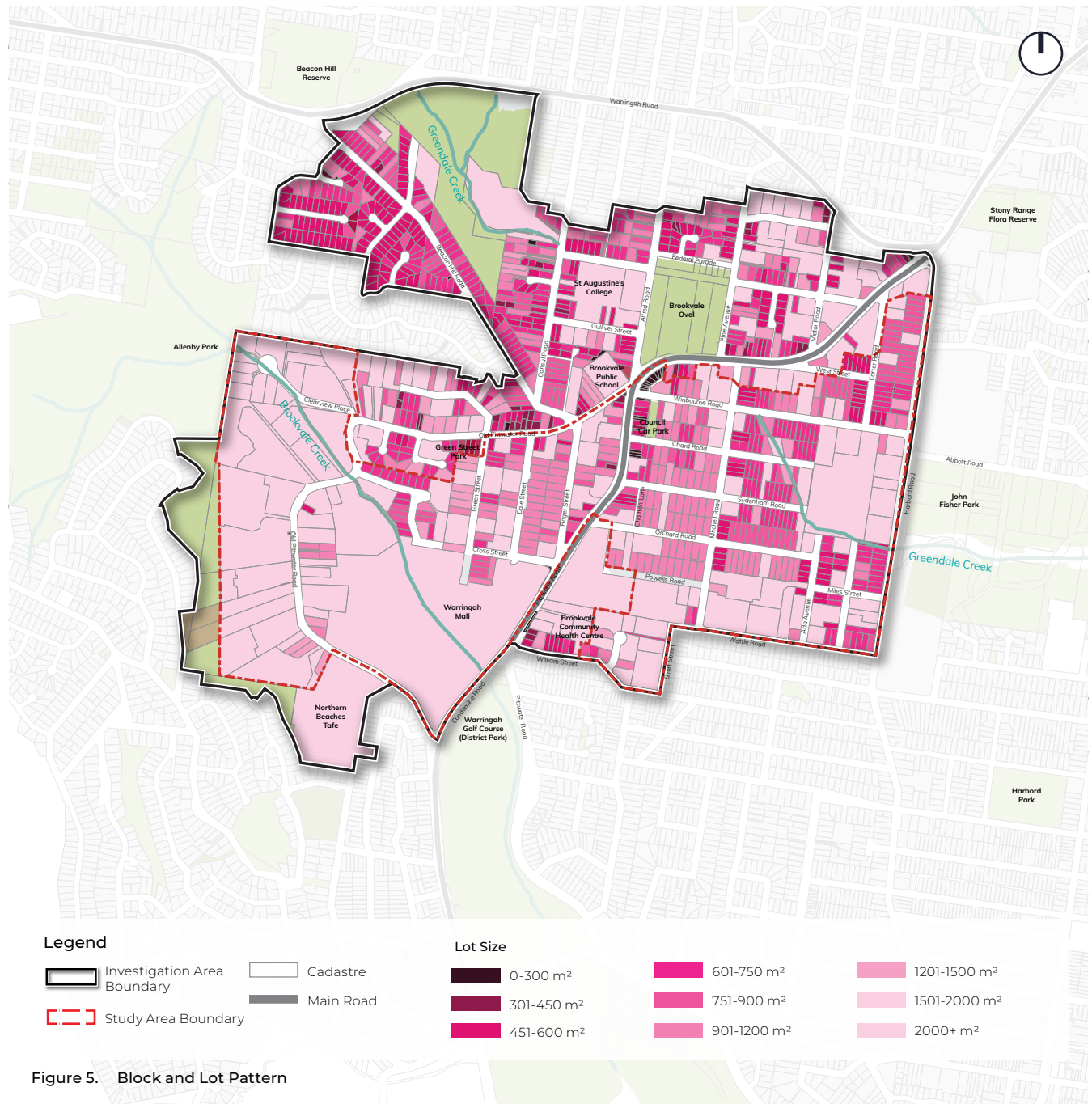
The width of lots in the investigation area generally corresponds with the overall area of the lot, with larger lots generally having a wider street frontage and width.

Warringah Mall contains the largest floor plate for retail purposes of approximately 3-4 storeys, in contrast to retail and commercial uses concentrated along Pittwater Street comprising small floor plates up to 2-storeys, with residential above in some areas. Large industrial warehouses with open pads contain large floor plates between 1-2 storeys and congregate to the east and west of Pittwater Road.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Utilise large lots with single land ownership within the investigation area to create a structure suitable for mixed use urban typologies.
- Establish minimum lot amalgamation and minimum site frontage requirements to avoid potential site isolation for smaller lots in proposed mixed use areas.



4.3 Movement

Pittwater Road is the main arterial road serving as a north-south connector through the investigation area. The road facilitates both regional movements to surrounding suburbs, as well as local trips between Dee Why and Brookvale. Warringah Road serves an east-west major arterial road connecting Pittwater Road to Chatswood.

Pittwater Road is well serviced by existing bus routes including the B-Line, with the bus stop located adjacent to Warringah Mall. Other local bus routes service the length of Pittwater Road as well as some local roads including Winbourne and Mitchell Road.

Designated cycle routes cover a significant portion of the investigation area, located along the major arterial roads and some local roads. Multi-use trails and paths are located along surrounding green links that feed into the investigation area, as well as some local roads.

On-street parking is located throughout Brookvale. Significant areas of off-street paid parking is located at the B-line stop and within Warringah Mall.

The blocks along the western side of Pittwater Road are impermeable, with a 540m long block on the Warringah Mall site and a 460m long impermeable interface along Pittwater Road to the north.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Improving the cycling network and pedestrian connectivity.
- Improving the permeability of blocks.
- Consider building to building pedestrian access into key points along Pittwater Road

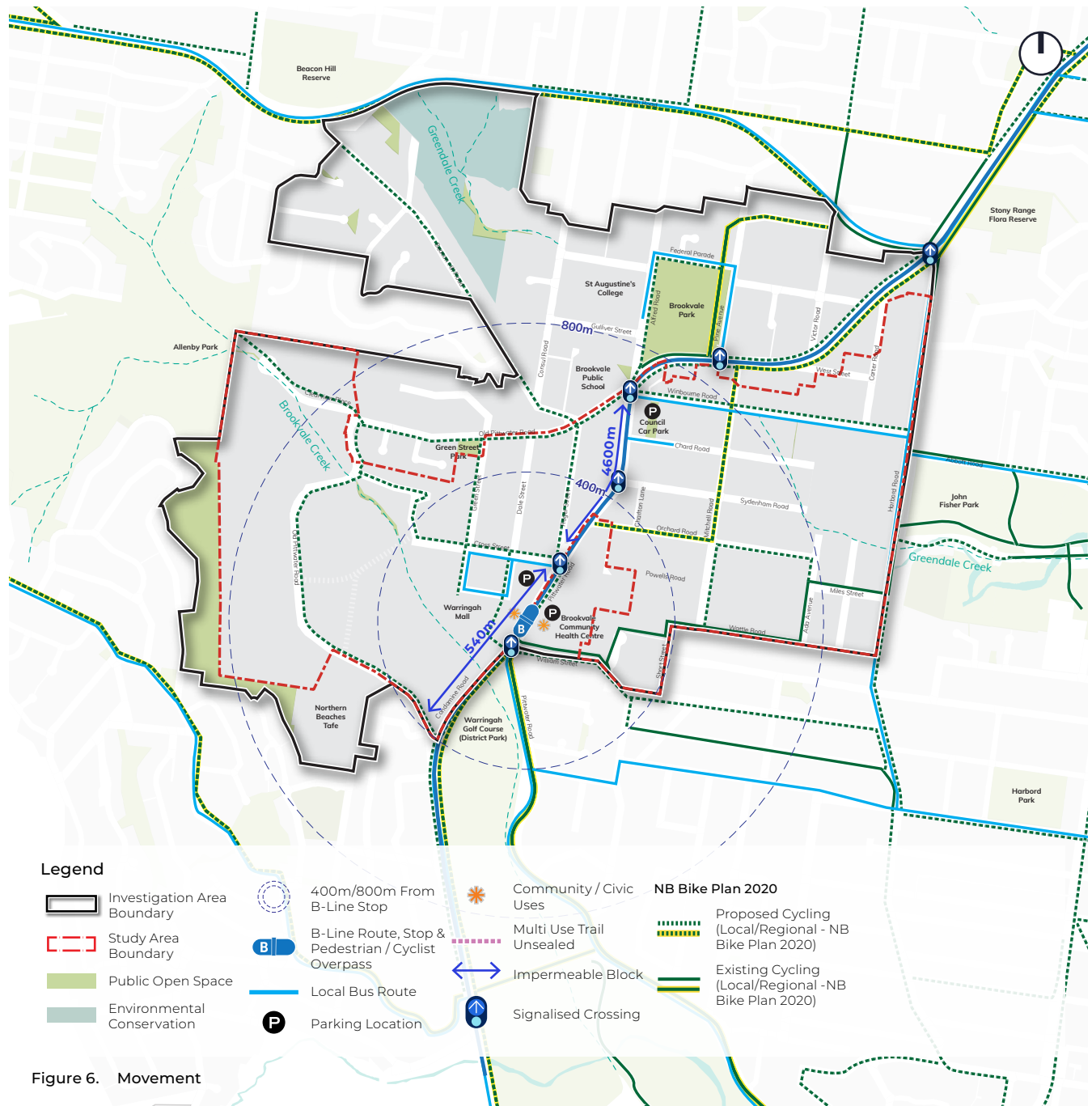


Figure 6. Movement

4.4 Traffic and Transport

Through the integration of the structure plan and the anticipated growth of Brookvale as an emerging mixed-use centre, traffic modelling from Bitzios as part of their transport strategy investigations resulted in the following:

- Increased northbound traffic congestion along Pittwater Road and Old Pittwater Road.
- Increased southbound traffic congestion along Beacon Hill Road into Old Pittwater Road.
- Traffic pinch point into the intersection of Cross Street and Old Pittwater Road.
- Traffic pinch point into the intersection of Old Pittwater Road and Green Street.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Improving intersections in a controlled manner to reduce flow on effects in the wider network.
- Respond to increased traffic congestion and reduce conflicts of vehicular movements by considering one-way interventions on north-south roads such as Dale Street and Green Street.
- Improve or install signalisation at key intersections such as Green Street and Cross Street.

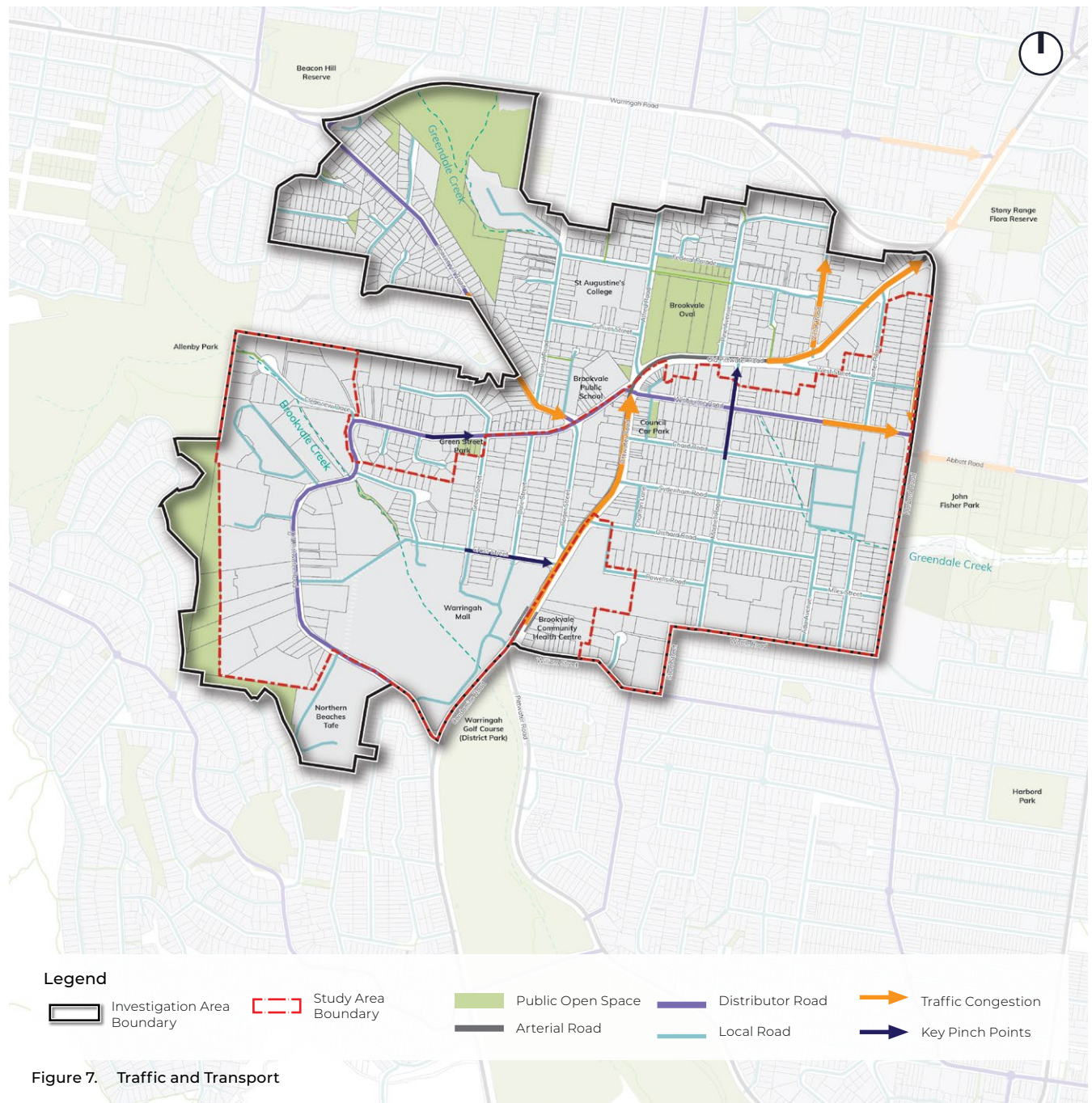


Figure 7. Traffic and Transport

4.5 Social and Cultural

While Brookvale primarily functions as the largest industrial centre on the Northern Beaches, the suburb also serves as a secondary civic centre.

Brookvale has a number of existing education centres including TAFE NSW, Brookvale Public School and St Augustine's College. In addition, there is a small library located within Warringah Mall.

Brookvale Oval is a key sports field on the Northern Beaches as the home ground of the Manly-Warringah Sea Eagles. A number of parks and are located within walking distance of the investigation area, including John Fisher Park and Warringah Golf Course. Additionally, smaller parks throughout the investigation area, such as Green Street Park provide a local open space for residents and workers.

Due to its industrial nature, many warehouses have been converted into recreational, creative industries, and retail uses such as gyms, arts and pottery studios, coffee shops and craft breweries.

Of note, there is limited community infrastructure or facilities within the Brookvale Dee Why catchment as identified within the Northern Beaches Social Infrastructure Strategy.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Opportunity to consolidate and introduce new community spaces and cultural elements in a prominent and central location with access to transport and amenities.
- Improve connectivity to education facilities and open space.

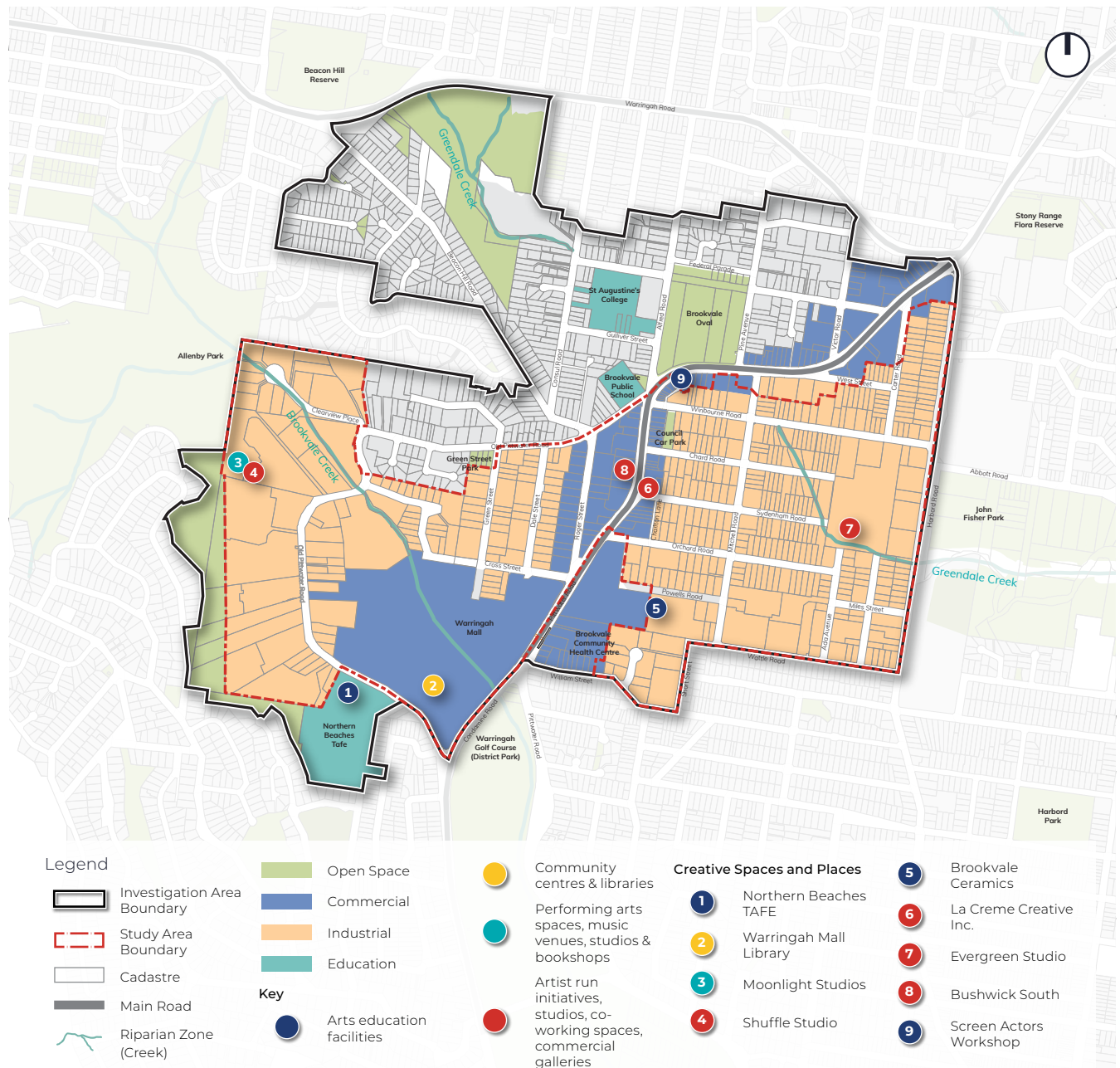


Figure 8. Social and Cultural (Source: Northern Beaches Connected Through Creativity 2029)

4.6 Topography and Natural Systems

The majority of the study area is located in a relatively flat area facing South East, with some steeper slopes to the surrounding hills, namely to the West.

It is situated in the Brookvale and Greendale Creek sub-catchments, within the Manly and Curl Curl catchments respectively. Due to its relatively flat nature and surrounding topography, it is prone to flooding as illustrated in Figure 8. It is also noted that some sections of Brookvale Creek have been piped throughout the site, namely in the Warringah Mall area.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Retain significant views from high points to maximise offerings from topography and natural systems.
- Recognise flood hazards at the topographic low point which may impact site planning and freeboard considerations.

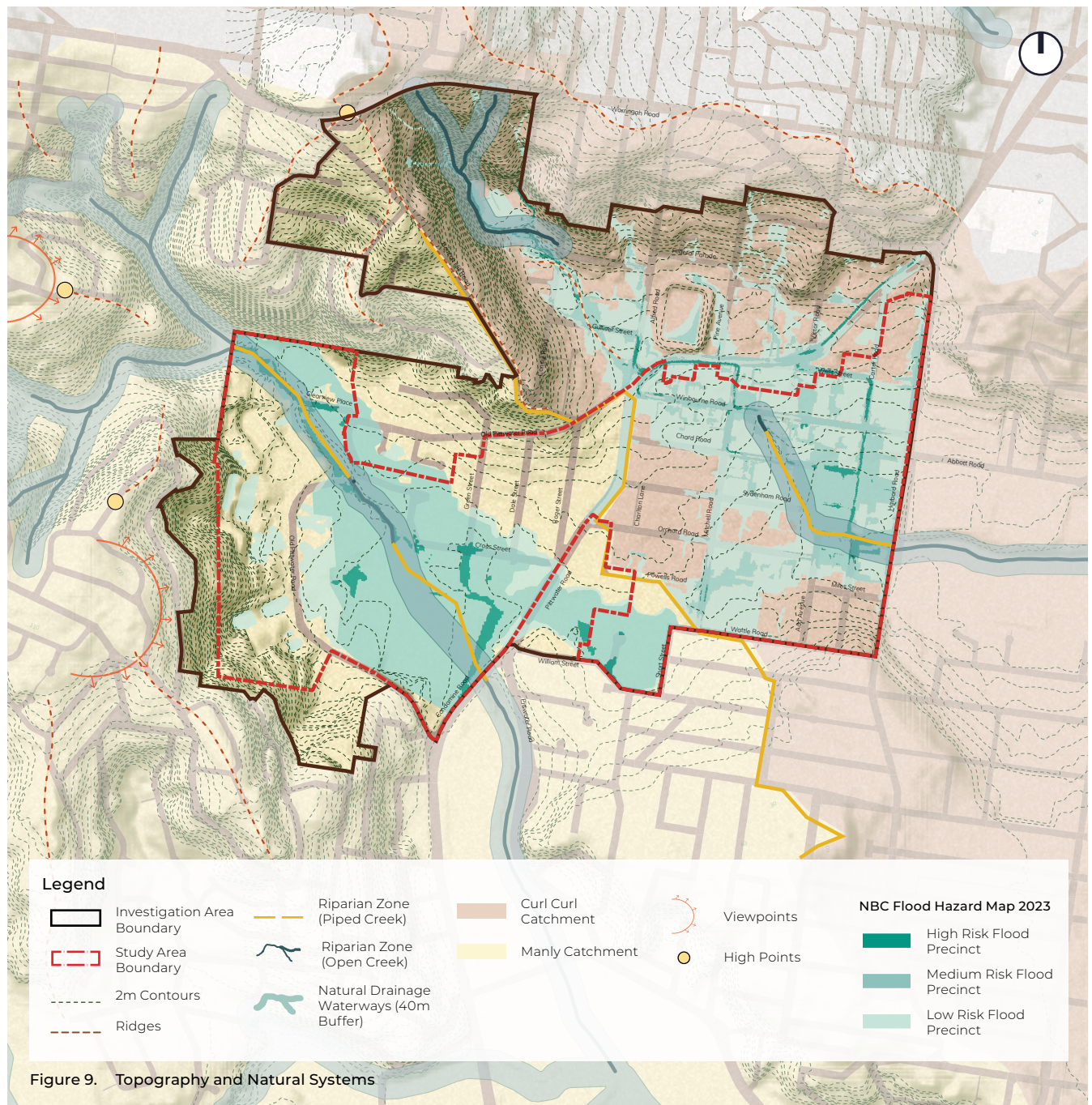


Figure 9. Topography and Natural Systems

4.7 Open Space, Vegetation and Wildlife Corridor

Although there is limited provision for open spaces within the study area, with the main one being Brookvale oval, it is noted that there are a number of significant open spaces in the site surrounds such as Allenby Park, John Fisher Park and District Park.

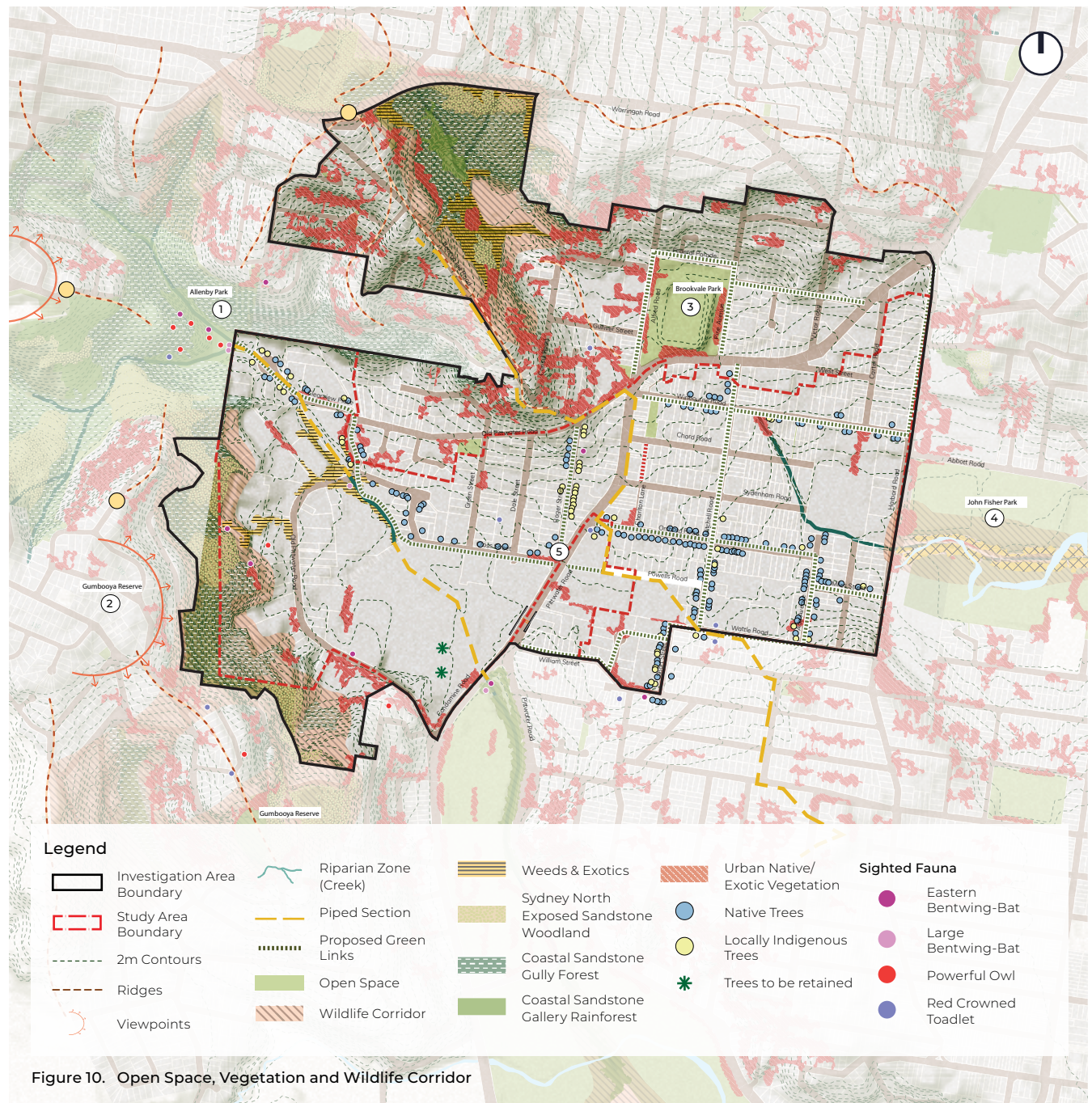
Street trees and small pocket parks provide some additional amenity however are highly restricted by the current land uses and presence of services, in particular electrical power lines. Generally there is no provision of open space / permeable areas within the private lots except in residential areas which are generally located outside the study area boundary.

Some mature trees have been identified and proposed for retention within the proposed developments to promote shade, habitat and a sense of place and belonging. Two wildlife corridors have also been identified along the North-South ridges surrounding Brookvale Creek.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Opportunity to introduce new open space in a prominent and central location with access to transport and amenities.
- Implement connections between the wildlife corridors, namely by providing additional street trees and under storey planting along the proposed green links.
- Introducing a variety of species along the green links to support habitat connectivity.
- Retain feature trees for a sense of place and belonging.
- Improve connections and wayfinding to open spaces.





① *Allenby Park*



② *Gumbooya Reserve : Aboriginal Site*



③ *Brookvale Oval*



④ *John Fisher Park*



⑤ *Pocket park intersection*



Passmore Reserve (Manly Vale to the south)

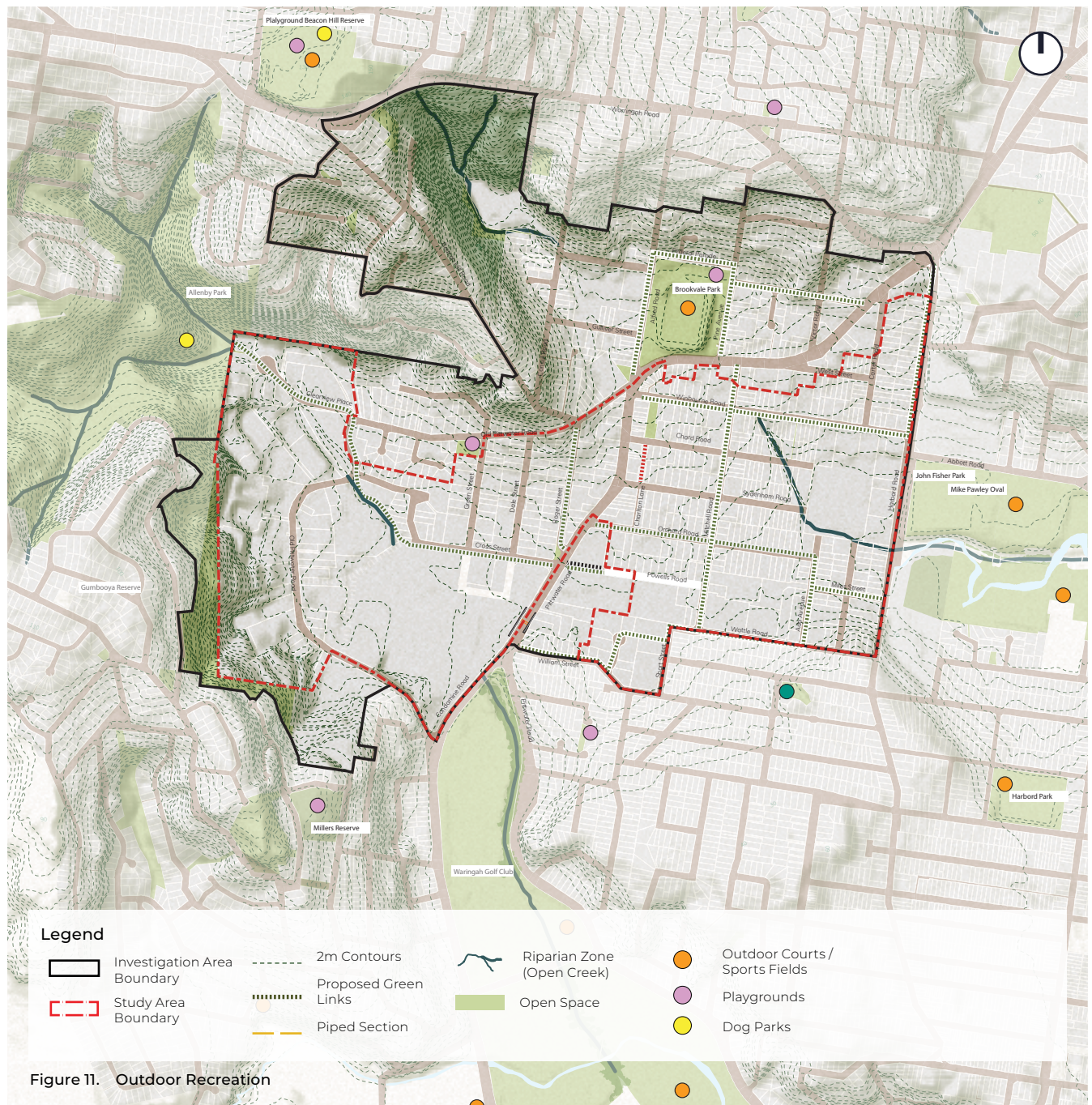
4.8 Recreational Facilities

There are a number of places for outdoor recreation around Brookvale. Brookvale Park is the only park with outdoor courts and sports field within the investigation area. Providing green links between these recreational facilities will be an important part of the structure plan.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Providing additional and improved green links between recreational facilities.
- Opportunity to introduce recreational facilities co-located with new open space in a prominent and central location with access to transport and amenities.



4.9 Environmental Constraints

Flooding is a significant factor within the study area, affecting a large portion of existing industrial land. Brookvale Creek falls from the north-west to the south-east of the study area, with areas of high flood risk under Warringah Mall and the B-Line stop. In addition, Greendale Creek also constrains some industrial land to the east of the study area.

The western portion of the study area is currently constrained by bushfire, with areas of Category 1 land, as well as areas within a bushfire buffer.

Significant areas of contamination are located around Warringah Mall, the bus depot and sites located within the eastern portion of the industrial lands.

Acid sulfate soils also form a significant development, with areas of Class 4 and Class 5 land identified in the southern portion of the study area.

Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- It would be desirable to re-naturalise the creek however as mentioned in the Water management strategy below-ground on-site detention (OSD) is to be avoided if possible due to the challenges associated with excavation and soil management in these areas.
- Mitigation strategies for flooding will need to be considered, particularly in areas where residential densification will occur.
- Consider water sensitive urban design measures in publicly accessible spaces to treat stormwater runoff.

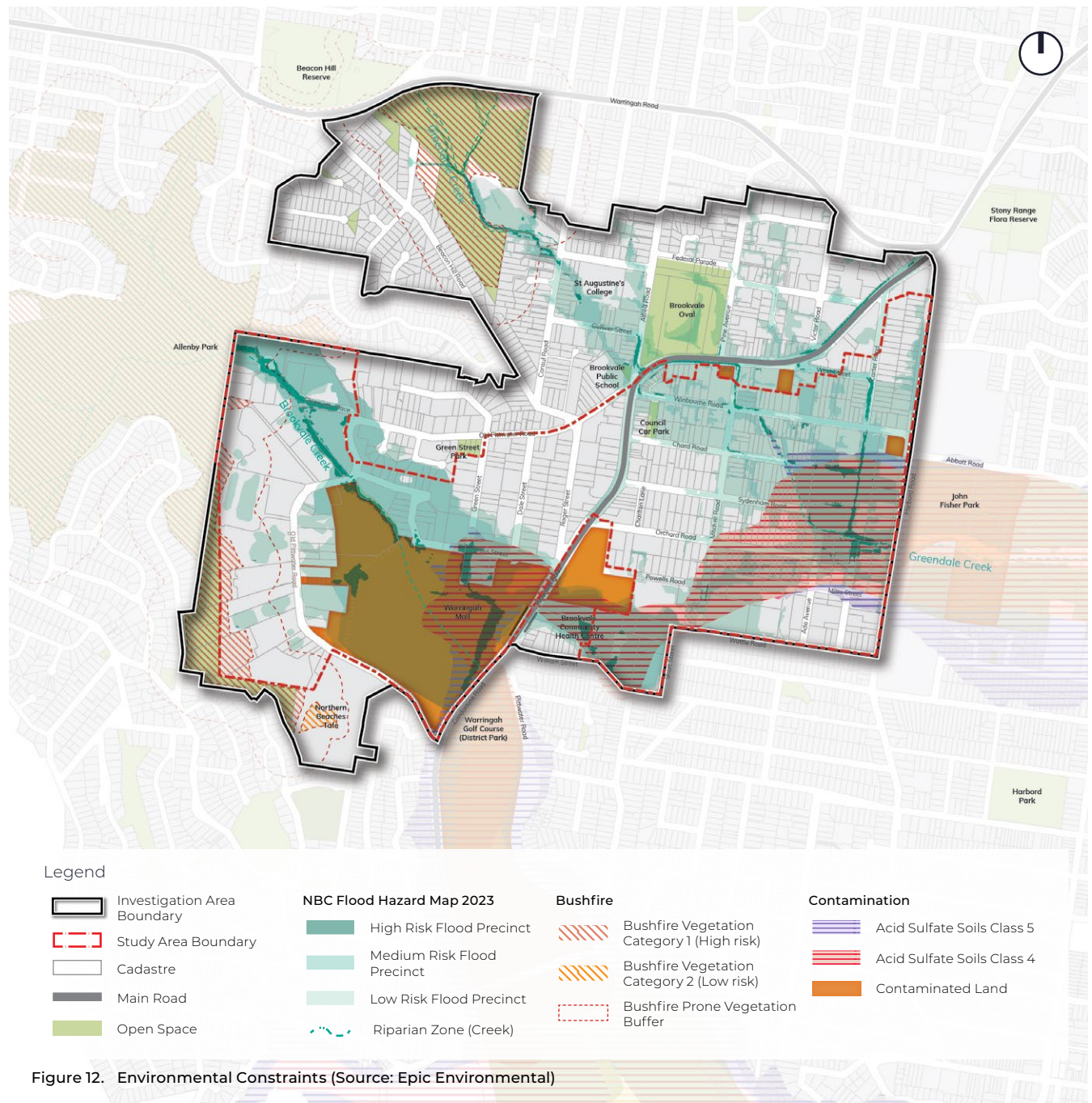


Figure 12. Environmental Constraints (Source: Epic Environmental)

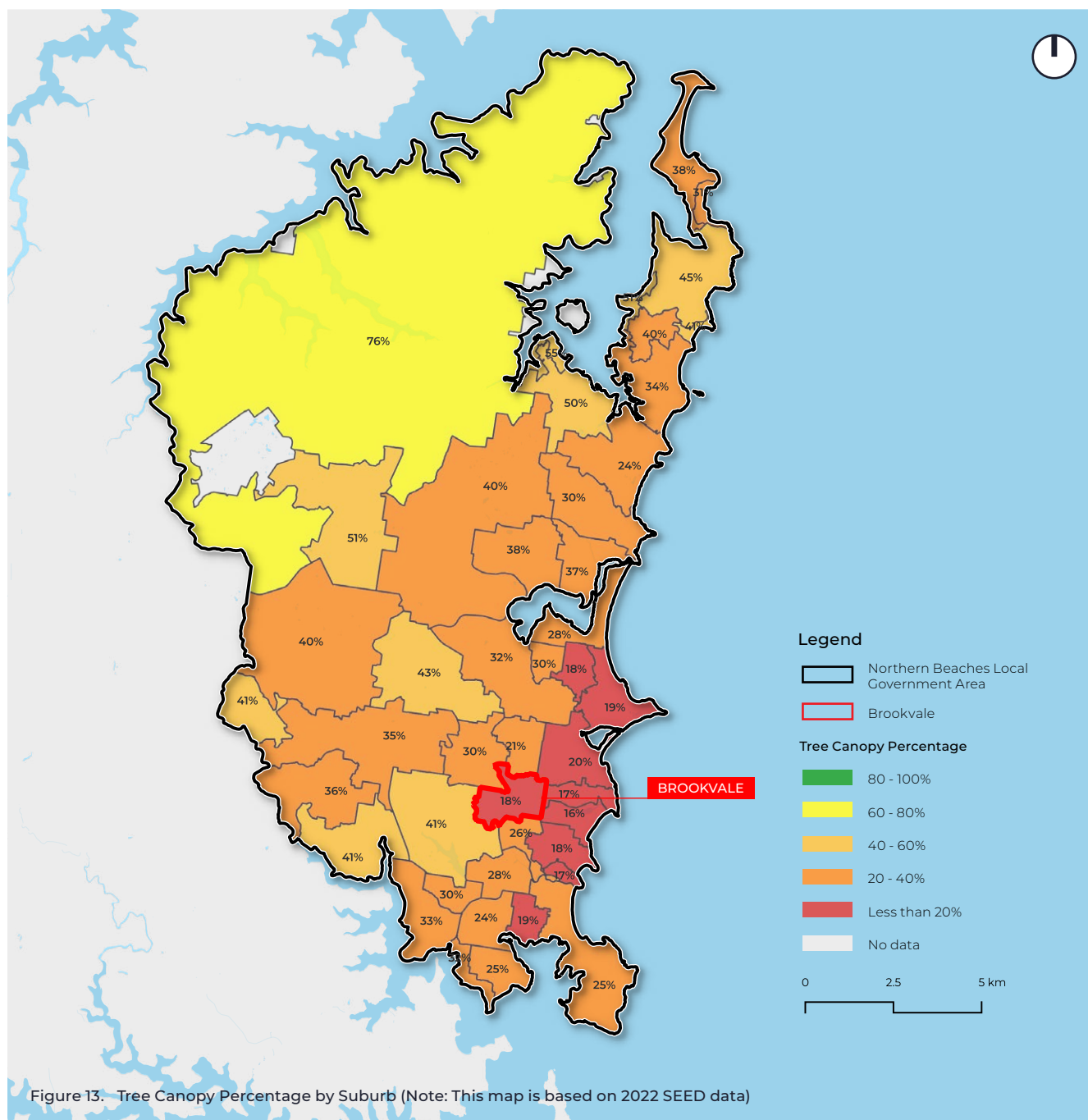
4.10 Urban Heat Island

A number of factors contribute to heat island effect with soil impermeability, lack of tree canopy and building materials playing a crucial role. The study area is largely industrial and dominated by roads, with most lots being fully occupied by buildings and /or parking. Generally, there is very little presence of permeable areas and limited supply of street trees, all contributing to higher temperatures and other associated issues such as higher levels of air pollution, heat-related illnesses and lack of amenity for active transport. Further, Brookvale is identified as one of the suburbs with the least canopy cover, sitting at 18% (SEED, 2022).

Key Takeaways

Strategies for reducing the urban heat island effect within Brookvale may include:

- Incorporating Water Sensitive Urban Design to promote soil hydration and passive irrigation.
- Additional planting of large street trees and provision of a mix of evergreens and deciduous species for enhanced cooling effect.
- Provision of increased soil volume along connected planter areas
- Retention of existing vegetation and mature feature trees found on site
- Management of services such as electricity poles currently restricting additional street tree planting.
- Introduction of set-backs for additional planting / controls on percentage of permeable soils within each lot and materiality of the ground plain and built form.
- Consideration of building materials and colour palettes.



4.11 Microclimates of Brookvale

Microclimates of Brookvale study by Western Sydney University

There are patterns of microclimatic variation within Brookvale where summer air temperatures can rise above 40°C which presents health risks for local communities (WSU, 2025).

The study by Western Sydney University found that Brookvale suffers from urban overheating due to its dominant industrial character and low tree canopy cover. It recommends a number of initiatives and supports the Brookvale Structure Plan vision of improving green links and tree canopies across the study area.

Key Takeaways

Strategies for reducing the urban heat island effect within Brookvale may include:

- Increasing tree canopy cover throughout the study area, particularly along areas with the highest mean temperatures like Dale Street and Cross Street.
- Providing enough space for trees and landscaping, ensuring successful tree establishment and maintenance.
- Consider the orientation of streets and building heights that facilitate air movement and maximise the effects of sea breeze from the eastern coast.
- Integrating water sensitive urban design initiatives.
- Using permeable materials for surfaces and integrate vegetated spaces.

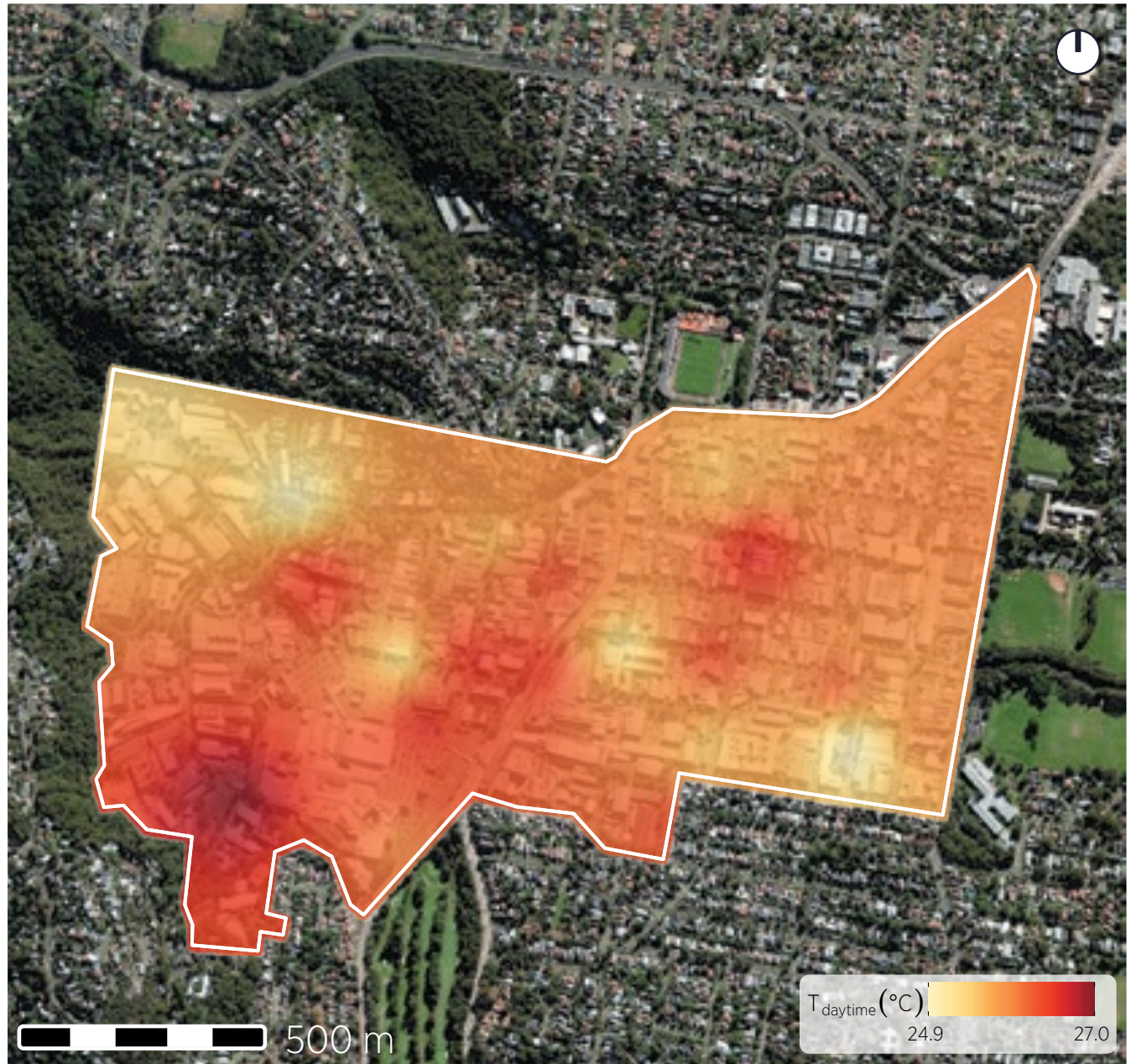
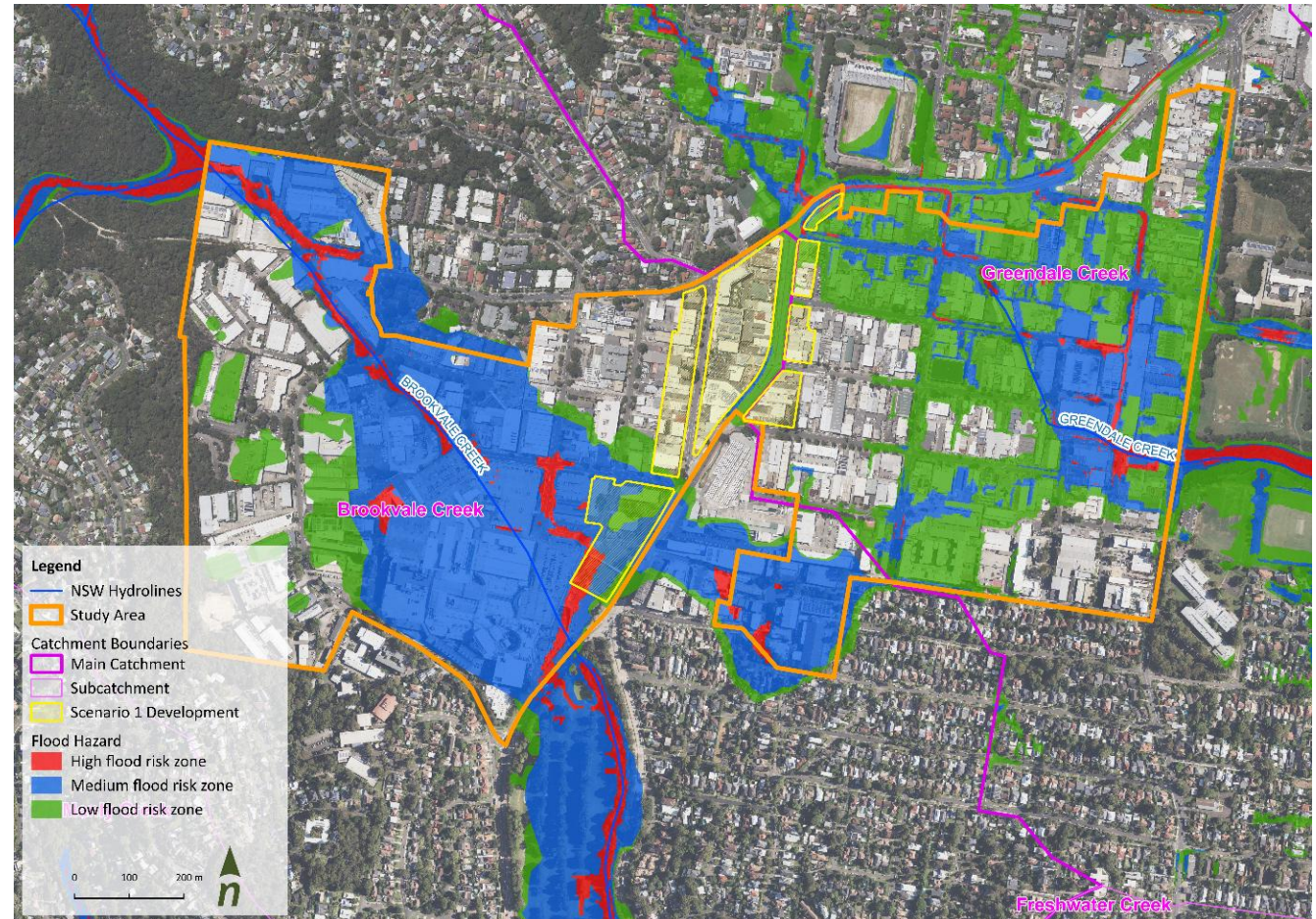


Figure 14. Mean daytime air temperature across Brookvale between 1 December 2024 and 15 February 2025.
Source: Microclimates of Brookvale (Western Sydney University, 2025).

4.12 Water Management

Under existing conditions, major storms cause flooding of Warringah Mall by way of both overland flows and out-of-bank flows from Brookvale Creek.

The flood investigation, in collaboration with the Water Sensitive Urban Design (WSUD) plan, will seek to provide an environment that safely passes floods while not making conditions worse downstream.



Key Takeaways

Strategies to consider in the Brookvale Structure Plan:

- Opportunities to provide above ground parking, additional freeboard and sleeved interfaces throughout Brookvale.
- Consider the implementation of WSUD principles, passive irrigation and permeable surfaces.

Figure 15. Existing Flood Hazard Map
Source: Water Management Strategy (Alluvium).

4.13 Utilities

This is a brief summary of findings from the Brookvale Structure Plan Utilities Capacity Assessment undertaken by SMEC (2025). For more details refer to their report.

Electricity

A high-level review by Ausgrid and SMEC has concluded that the Brookvale Zone Substation requires no major works in the immediate future (15 years) and the existing 11kV supply network has available capacity.

Ausgrid have an existing network that traverses through Roger Street and Old Pittwater Road. Its consists of a 33kV sub-transmission overhead feeder S07.

Potable Water and Waste Water

A high-level assessment by Sydney Water has confirmed that there is enough capacity in the Potable Water and Waste Water systems for proposed development aligned with the Brookvale Structure Plan, however, more detailed investigations are required per site.

Gas

No high-level assessments were provided by Jemena Gas Networks, enquires are required per site.

Telecommunications

NBN Co.'s service rollout map indicates fixed line connectivity available for Brookvale, however, detailed enquires are required per site.

Key Takeaways

Utilities to consider in the Brookvale Structure Plan:

- Providing setbacks on Roger Street to avoid the 33kV sub-transmission overhead feeder S07.
- Consider moving the Ausgrid 33kV overhead feeder underground.

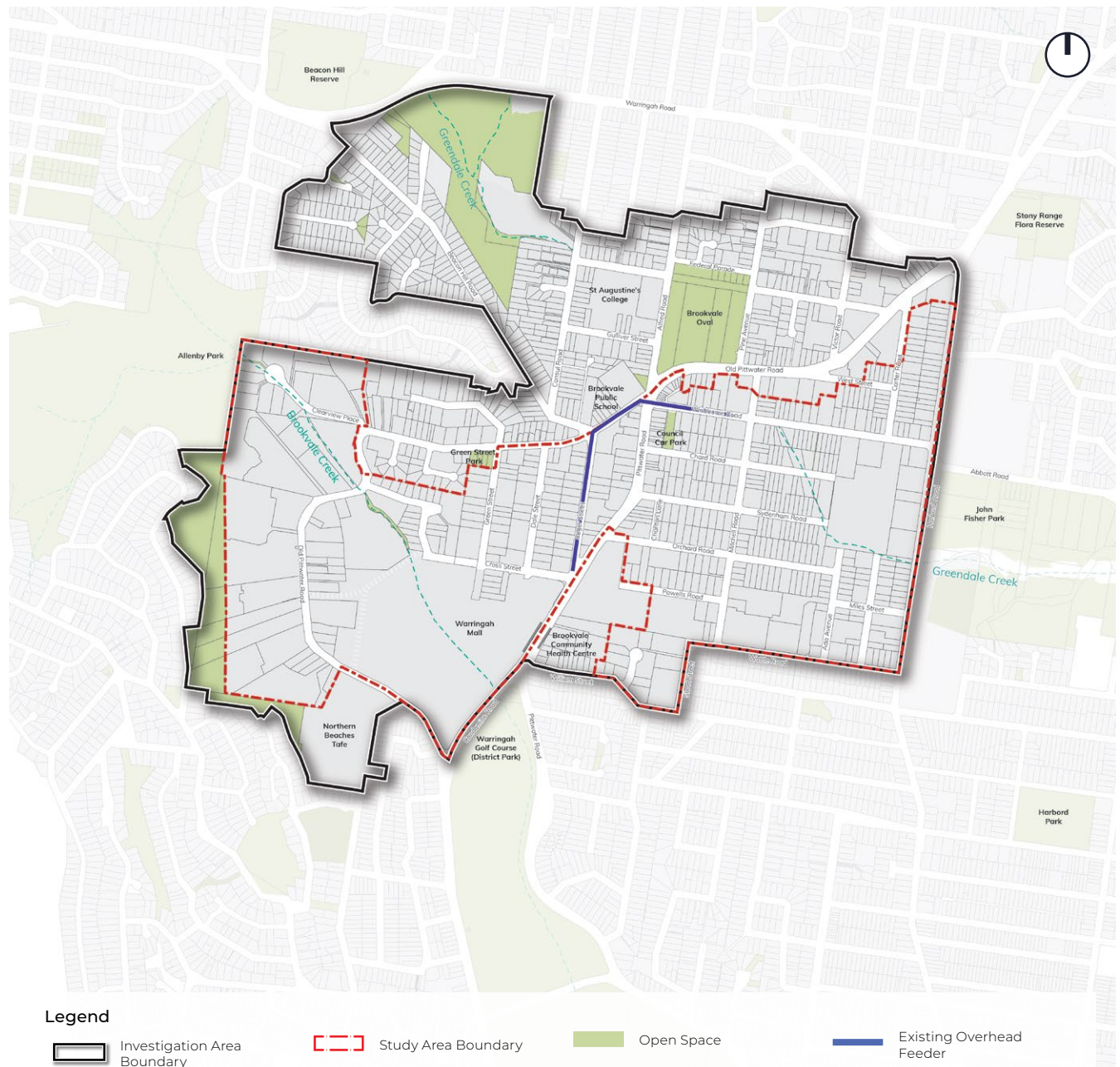


Figure 16. Utilities (Note: This map is based on data from the Utilities Capacity Report by SMEC)

4.14 Constraints

There are a number of key constraints as a result of the natural environmental, traffic barriers and fragmented ownership patterns affecting the investigation area. These constraints limit the capacity of growth the centre will be able to support in the future. The key constraints identified include the following:

- 1 Significant flood hazard in low lying commercial and industrial areas
- 2 High urban heat effects due to significant hardstand areas and limited urban tree canopy.
- 3 Lack of public open space within the study area
- 4 Traffic congestion during peak periods along Pittwater Road which limits access to services and employment areas in Brookvale
- 5 The division of the area into two distinct sides by the Pittwater Road arterial which is a barrier to east-west pedestrian and cyclist movement
- 6 Pedestrian amenity and permeability is limited due to long street blocks
- 7 Acid Sulfate Soil Class 4 has been identified on the southern portion of the study area, which may require relevant management, should any work 2 metres below the natural ground be carried out
- 8 A number of parcels has been identified as contaminated land; while it would be desirable to re-naturalise the creek, it is advised that below-ground on-site detention is to be avoided due to the challenges associated with excavation and soil management
- 9 High-risk Bushfire Vegetation is adjacent to the residential area on the north-western side of the Investigation Area
- 10 Large amount of land owned by a single landowner, delivery of key outcomes may solely depend on their redevelopment which is a risk.
- 11 33kV sub-transmission overhead feeder along Roger Street

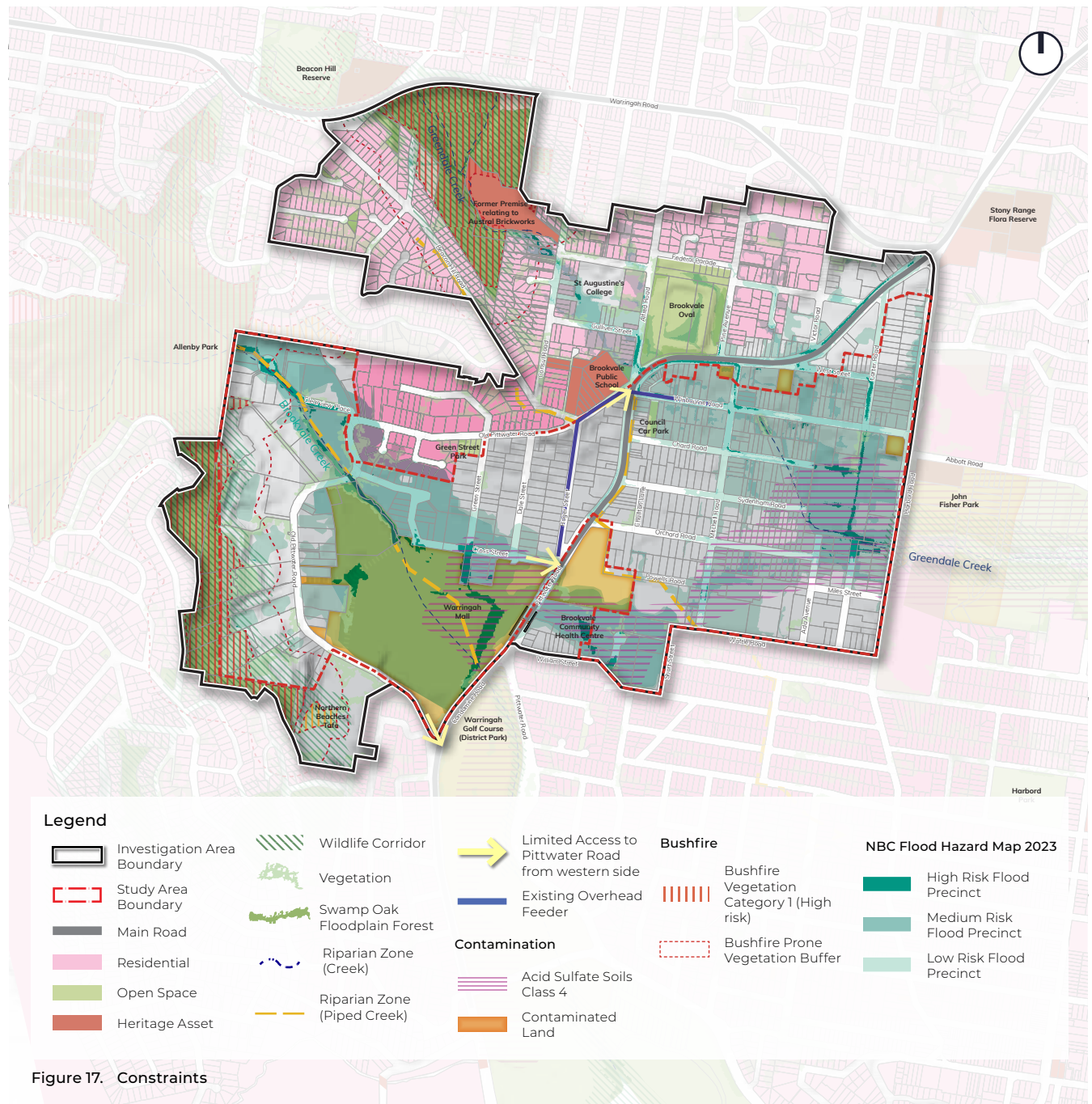
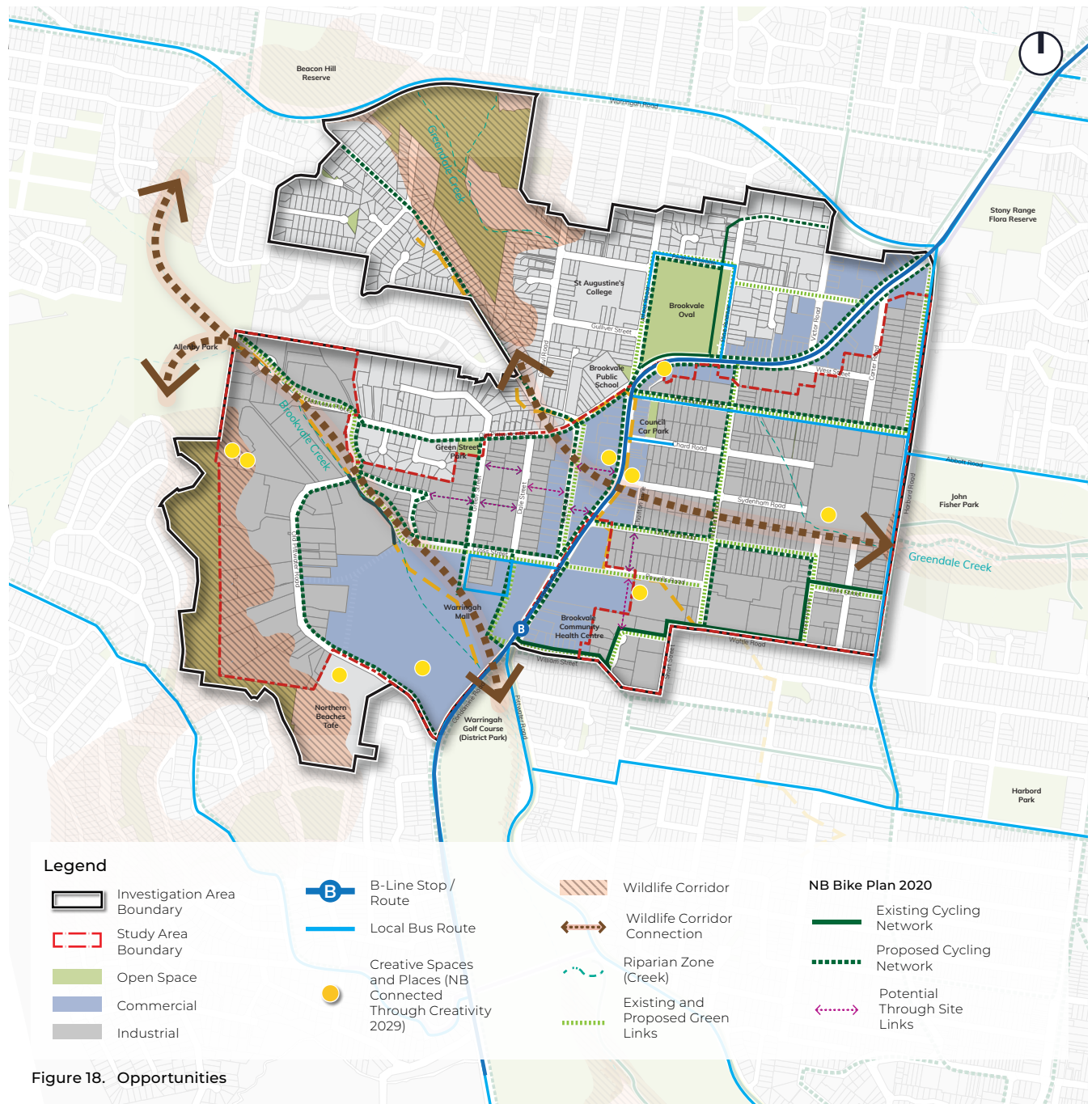


Figure 17. Constraints

4.15 Opportunities

There are a number of key opportunities identified that will help inform the implementation of the structure plan. The key strengths and opportunities identified include:

- 1 Its accessibility to the B-line which has frequent services and connects Brookvale to other major centres.
- 2 Establishing a new community focal point with new open space and community infrastructure that is close to existing services and amenities
- 3 Its access to a large white-collar labour force within Northern Beaches LGA that may support the delivery of commercial office space to allow residents to live and work within the local area
- 4 The emerging number of creative industries that are supporting Brookvale's role as destination for workers and visitors, with a number of creative places within walking distance from public transport
- 5 Providing linkages between habitat corridors through the site in the form of WSUD (swales along roads, green/linear links)
- 6 Improving existing cycle routes as most cycle lanes are not clearly defined or protected
- 7 Ensuring that built form continues to harness long range views to the surrounding topography
- 8 Emphasising the bush-coastal character of the area within streetscape design and built form
- 9 Consolidating future development along Pittwater Road to integrate with existing public transport links and Warringah Mall
- 10 Align the proposed cycle network and the green links to improve permeability and connectivity to the open space facilities and other critical ones such as schools.
- 11 Large amount of land owned by a single landowner, provides an opportunity to create a structure suitable for mixed use urban typologies.



5. Vision and Principles for Brookvale

This chapter sets out a vision for Brookvale and defines the design principles that have been used to inform the Master Plan and its approach to built form, public domain, movement and connectivity.

It expands on the desired future character of Brookvale by defining five sub-precincts. Each celebrating its unique existing and aspiring uses.

5.1 Brookvale Vision

Vision

Nestled in its unique coastal and bushland environment, Brookvale will be a vibrant, accessible and enlivened place. It will fulfil its role as an employment-focused centre, supporting the local economy with opportunities that are proudly diverse, innovative and creative. The centre will be a liveable and sustainable place supported by activity, public spaces, and community services that embrace parts of Brookvale's character and unique environmental qualities that will be highly valued by employees, residents and visitors.

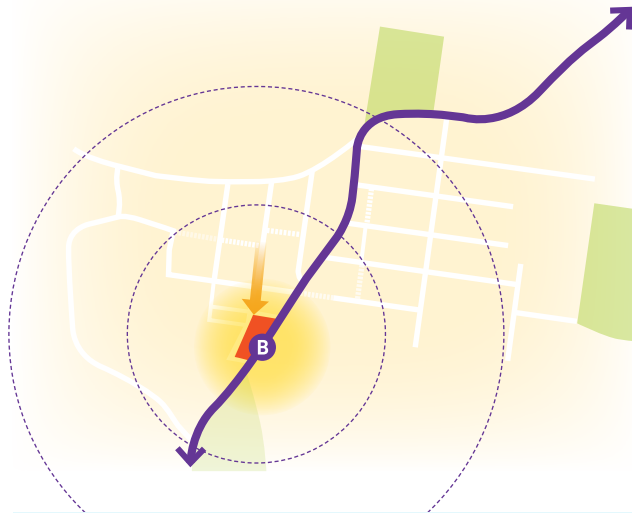


5.2 Brookvale Design Principles



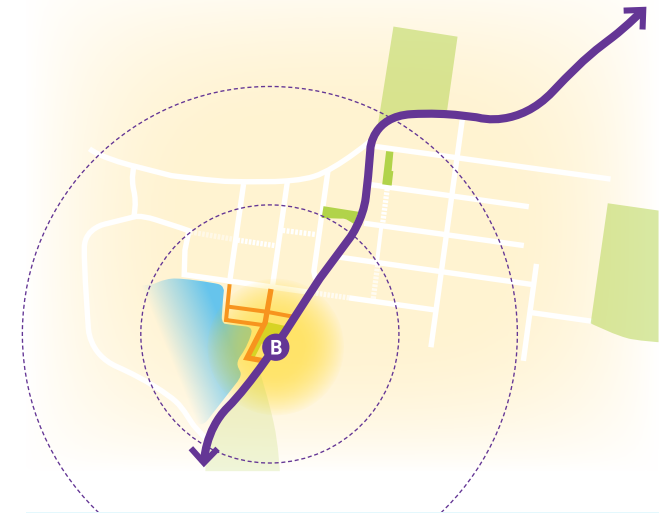
DISTINGUISH AND PRESERVE BROOKVALE'S EMPLOYMENT LANDS

Recognise the importance of Brookvale's diverse and distinguished employment lands which contribute to the economic prosperity of the Strategic Centre and the greater Northern Beaches district.



ESTABLISH A TOWN CENTRE WITH GREATER AMENITY

Refocus the town centre west of Pittwater Road to establish a cluster of activity and greater amenity around the B-Line stop and formalise an extension of Dale Street through this precinct as a new High Street.



INTEGRATE EXISTING AND NEW LAND USES

There is the opportunity for Warringah Mall to rethink the urban blocks fronting Pittwater Road to include a mix of land uses and open space which stitches into the existing and future grid, acting as a catalyst for further activation of the town centre.



CULTIVATE SPACES FOR PEOPLE TO CONNECT, CREATE AND LEARN

Establishing destinations for the community that celebrate the creative culture of Brookvale with spaces for programmed events and initiatives that meet the changing needs of the community.



CREATE A WALKABLE GRID

Historically there are large blocks in Brookvale. New through-site links and laneways will allow for a regular urban grid with improved permeability and access.

Different street typologies and character zones will set up a street hierarchy, that enables more legible connections.



LINK THE NATURAL ENVIRONMENT

Dense canopy cover in combination with native planting, WSUD principles and connected permeable surfaces provide a healthy living system that supports pedestrian and wildlife presence and movement through the public domain.

5.3 Desired Future Character

The Core

The Core will be the primary activity hub and civic heart of Brookvale. The cross-section of community infrastructure, retail, commercial office and residential will make this pocket a lively place to visit every day of the week, day or night. The extension of Dale Street south will support high street activity and link Warringah Mall with its surrounding urban structure.

A large town square of a minimum 5,000 square metres with areas of open space will be delivered to support a range of recreational activities within the Core. This public space will establish a new arrival to Brookvale for commuters travelling on the B-line and will be a primary space for workers, residents and visitors to meet and dwell, and for potential community events to be held.

Buildings up to 25 storeys will be a marker for the Core as the centre of activity within Brookvale. This will be supported by active ground floor uses with shop fronts and outdoor dining opportunities that spill out onto pavements that cater for the office workers, shoppers and residents alike. The public domain of the Core will be pleasant and accessible, with generous setbacks to support wide footpaths and attractive green infrastructure to support urban cooling.



Figure 19. The Core, view north across town square towards Dale Street



Pittwater Road

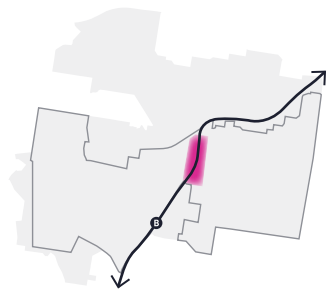
Pittwater Road will maintain its mixed use identity, with new mixed use buildings up to 25 storeys. Ground level uses along Pittwater Road will continue to support a range of showrooms for vehicles and home materials and fixtures, office, creative and maker spaces. This will support and attract business and operations in the surrounding industrial lands.

To enhance the pedestrian environment along Pittwater Road, buildings will be set back further from the road corridor to provide opportunities for widened footpaths, street tree planting and a shared cycleway. Improved pedestrian crossings will also be provided at two key signalised intersections on Pittwater Road to provide a more comfortable environment for pedestrians crossing.

The transformation of Winbourne Road Car Park to a new open space, Winbourne Park, will improve open space amenity within Brookvale and will present opportunities for active uses along the new park. The new Park as well as the new laneways areas will be transformed to support temporary activation through special events, markets and small-scale exhibitions where local producers and creatives share skills and showcase their products, providing a key attraction for visitors.



Figure 20. Pittwater Road view



Roger Street

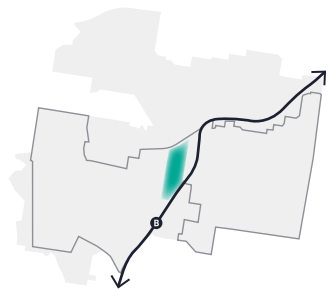
Roger Street will maintain its light industrial identity, with a twist on the mixed use typology. Moving away from traditional ground level retail uses, ground levels will have a renewed emphasis on supporting a broader range of working spaces, such as maker-spaces, creative enterprises, artisanal food and drink producers and small-scale retail that will co-locate with residential uses above. This diversity of employment uses will invite curiosity from pedestrians and be a key part of this pocket's bustling character.

Buildings will be between 10-25 storeys with a clear distinction between residential and employment uses through variations in floor height and facade design. Dwellings will have access to high levels of residential amenity through solar access and less exposure to surrounding noise impacts.

The new central open space, Roger Park, a minimum of 3,200 square metres will encourage workers, residents and visitors to meet and dwell. Street trees and landscaping will be interspersed between parking and loading bays to soften the streetscape, providing a pleasant thoroughfare for pedestrians.



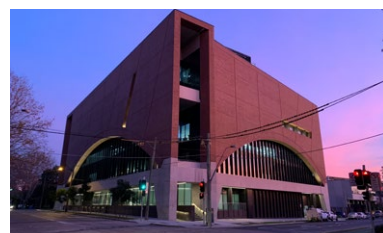
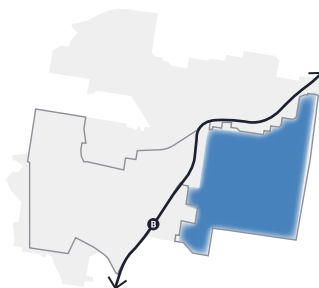
Figure 21. Roger Street view



Industrial East

Industrial East will continue to support a range of industrial urban services, while accommodating areas for creative uses. Being a hub of creative intelligence and production the Industrial East will continue to be the obvious home for creative entrepreneurs on the Northern Beaches. Priority is given to industrial activities that are unable to locate in other zones.

The fine grain, low-rise built form will respect its industrial heritage whilst pioneering innovative new sustainable technologies and localised energy generation. Connections in and around this hub will be improved as well as the ground plane experience for pedestrians looking to explore the entrepreneurial fabric of the area. Uplift in heights will support expansion of much needed floorspace and encourage modern industrial buildings to meet the needs of population serving and emerging entrepreneurial industrial businesses.

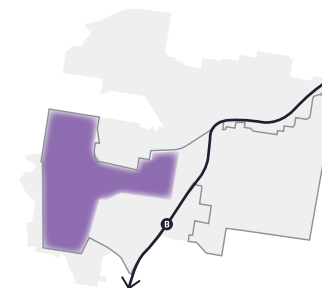


Industrial West

Industrial West will continue to primarily support a range of larger industrial and manufacturing businesses and urban services, while supporting more bespoke industries, such as health and wellbeing operators and recreational facilities. The priority will be to retain and manage industrial uses that are unable to locate in other zones.

Employment activities on Dale Street will support less intrusive employment uses with regard to amenity impacts (i.e. noise and odours) and the eastern side of Dale Street may accommodate new small-scale office spaces that build on the higher amenity achieved by some more recent non-industrial developments and provide a transition between the residential uses in Roger Street and the main industrial area to the west.

Pedestrian linkages with new landscaping features will enhance the environment for connections to nearby public open spaces such as Allenby Park and Green Street Park.



6. Structure Plan

This chapter presents a refined structure plan framework with recommendations that reflect the findings of technical studies to date at an Investigation Area extent.

This chapter helps address the Structure Plan response to land use, connectivity, natural systems and urban heat before zooming into the Master Plan extent in the next chapter.

6.1 Structure Plan

Brookvale is defined by the creation of a high amenity town centre anchored by a town square, community and civic uses as well as a new high street leading to the B-Line stop. At this location, there is a commercial focus at the corner of Pittwater Road and along Cross street with mixed used areas focused to the north along Roger Street and Pittwater Road.

The Structure Plan and its proposed land uses will enable the realisation of a more diverse composition of activity within Brookvale that complements its existing uses.

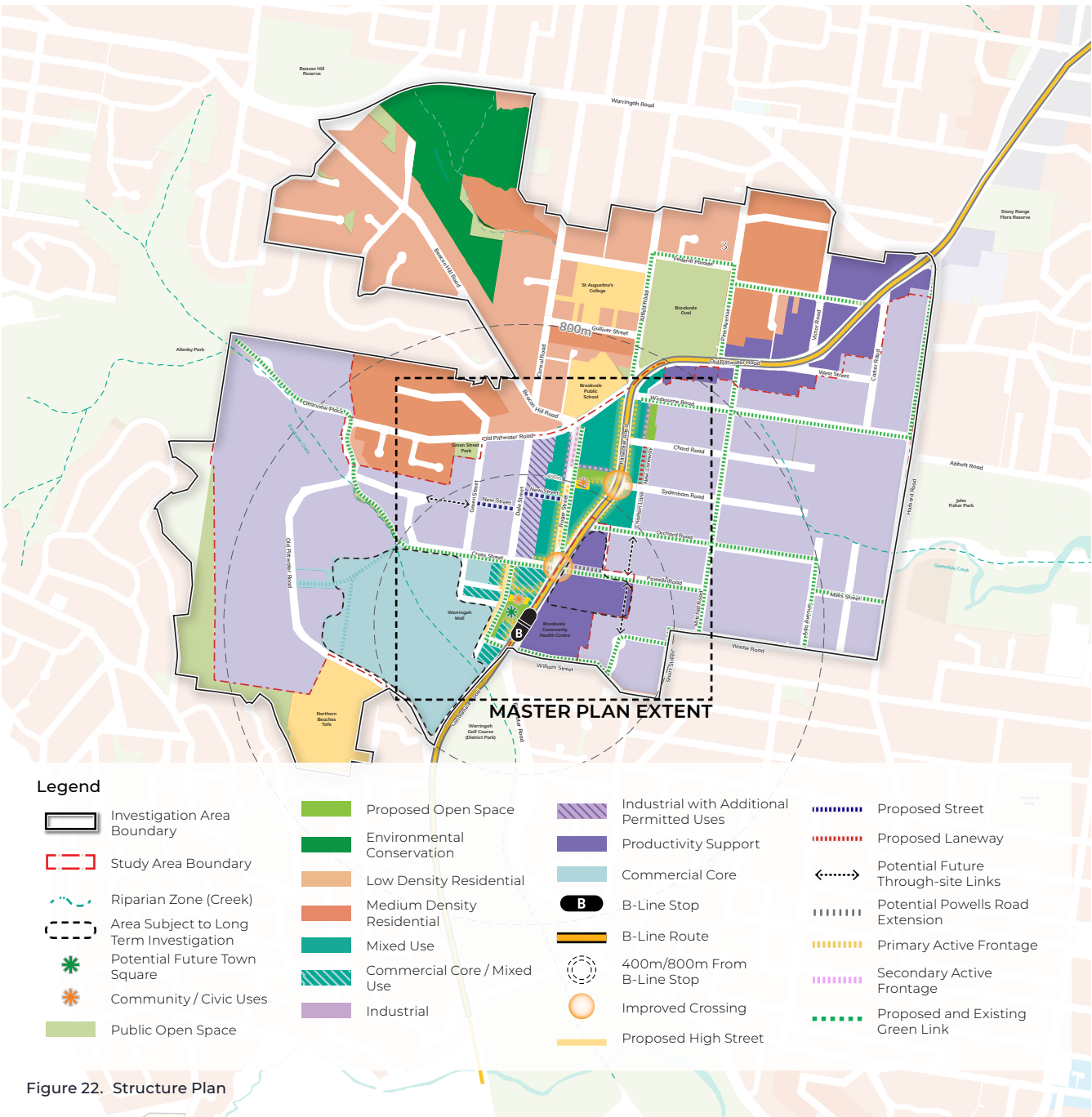


Figure 22. Structure Plan

6.2 Transport

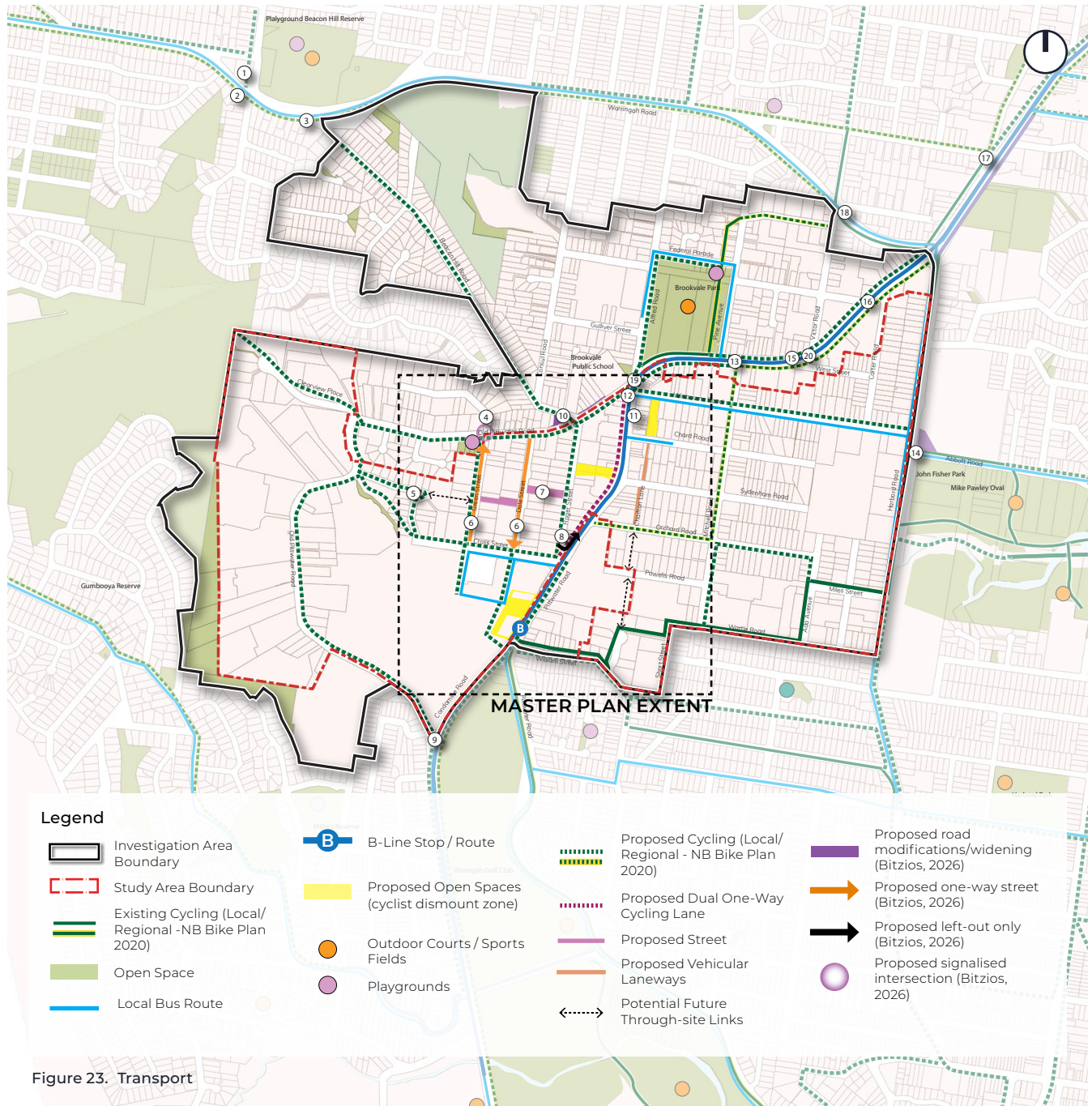
Brookvale is serviced by a range of transport modes which include buses, bicycles and private transport that ensure connectivity between key infrastructure.

Along with the additional connections proposed as part of the Northern Beaches Bike Plan 2020, improvements and modifications to the transport network have been identified that will help facilitate and support the growth of Brookvale.

Proposed Network Upgrades and Modifications (Bitzios, 2026)

Refer to the Transport Strategy for more detailed information

- ① Upgrade Cornish Avenue to provide lane extensions and three lanes
- ② Extend left turn lane for Warringah Road and provide two lanes
- ③ Extend right turn bay on Beacon Hill Road and provide dual left turn slip lanes on Beacon Hill Road
- ④ Upgrade roundabout to traffic lights at junction of Old Pittwater Road and Green Street
- ⑤ Disconnect Cross Street between shopping and industrial precincts
- ⑥ Convert Green Street and Dale Street to one-way
- ⑦ Provide a new local street between Green Street and Roger Street
- ⑧ Convert junction between Roger Street and Pittwater Road to left-out only from Roger Street
- ⑨ Extend left turn slip lane from Pittwater Road to Old Wittwater Road
- ⑩ Undertake road widening to provide dedicated dual right-turn lanes into Beacon Hill Road and lane modifications
- ⑪ Extend parking restrictions between Winbourne Road and Chard Road
- ⑫ Ban right turn from Old Pittwater Road to Wittwater Road
- ⑬ Modify traffic signals to remove right turn into Pine Avenue, prioritise buses and provide dual right-turn lanes from Pine Avenue
- ⑭ Major realignment of Abbot Road to upgrade traffic signals to 4-way arrangement, provide dedicated right turn bays on Harbord Road
- ⑮ Upgrade intersection of Pittwater Road and Victor Road to signals and consolidate nearby pedestrian crossing into signals
- ⑯ Ban right turn from federal Parade to Pittwater Road
- ⑰ Modify intersection configuration for May Road as priority movement and provide 'Keep Clear' line marking across intersection
- ⑱ Upgrade intersection of Warringah Road and Victor Road to traffic signals and provide two lanes via parking restrictions
- ⑲ Convert to left-in only



6.3 Natural Systems and Ecology

Wild Life Corridor, Native Trees & Understorey Planting

The proposed layout explores the implementation of connections between the wildlife corridors adjoining the study area via street trees.

For this purpose, a number of streets were identified as suitable links for microfauna and insects based on the following criteria:

- keeping connections as short as possible
- exploring connections to existing open spaces (or riparian areas) as a way of providing stepping stones for wildlife moving across wildlife corridors.

This would be achieved predominantly through the use of native street trees and understorey planting. These would be used in combination with WSUD initiatives and passive irrigation to provide additional moisture. Consideration should also be given to the impacts of street lighting as this may affect nocturnal fauna.

Throughout the investigation area, in both streetscapes and open spaces, continuous (connected) deep soil zones which support microbial & fungal activity are to be maximised. Healthy soils and a connected living system actively contribute to plant health, nutrient cycling, permeability and water-holding capacity. Where continuous deep soil zones are not possible, mechanisms such as use of structural soils or similar should be explored to ensure a connected living system.

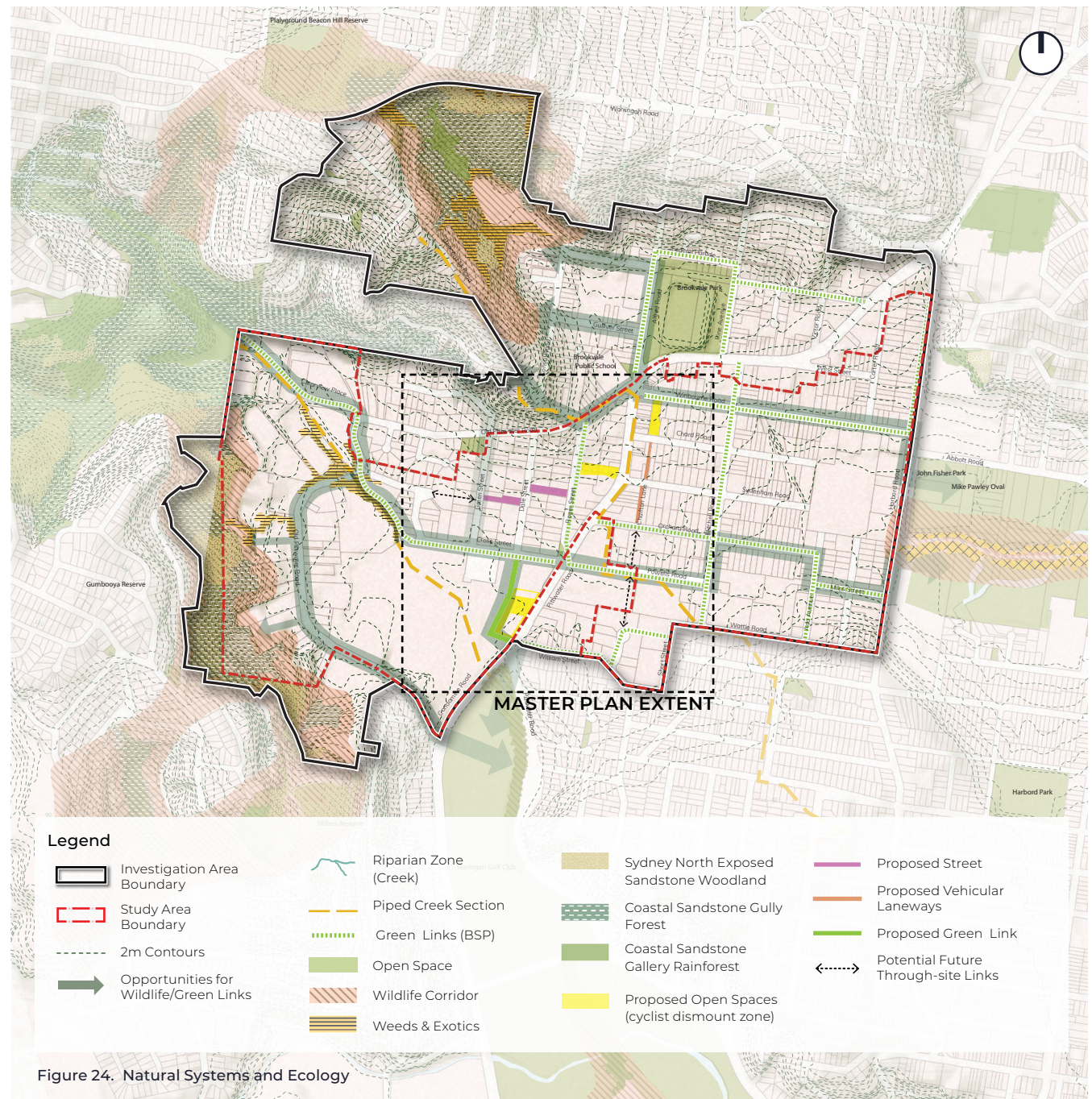


Figure 24. Natural Systems and Ecology

6.4 Urban Heat

The Northern Beaches Public Space Vision and Design Guidelines (NBPSVDG) nominates the street typologies and area characters for Brookvale. It also sets canopy cover targets for each typology:

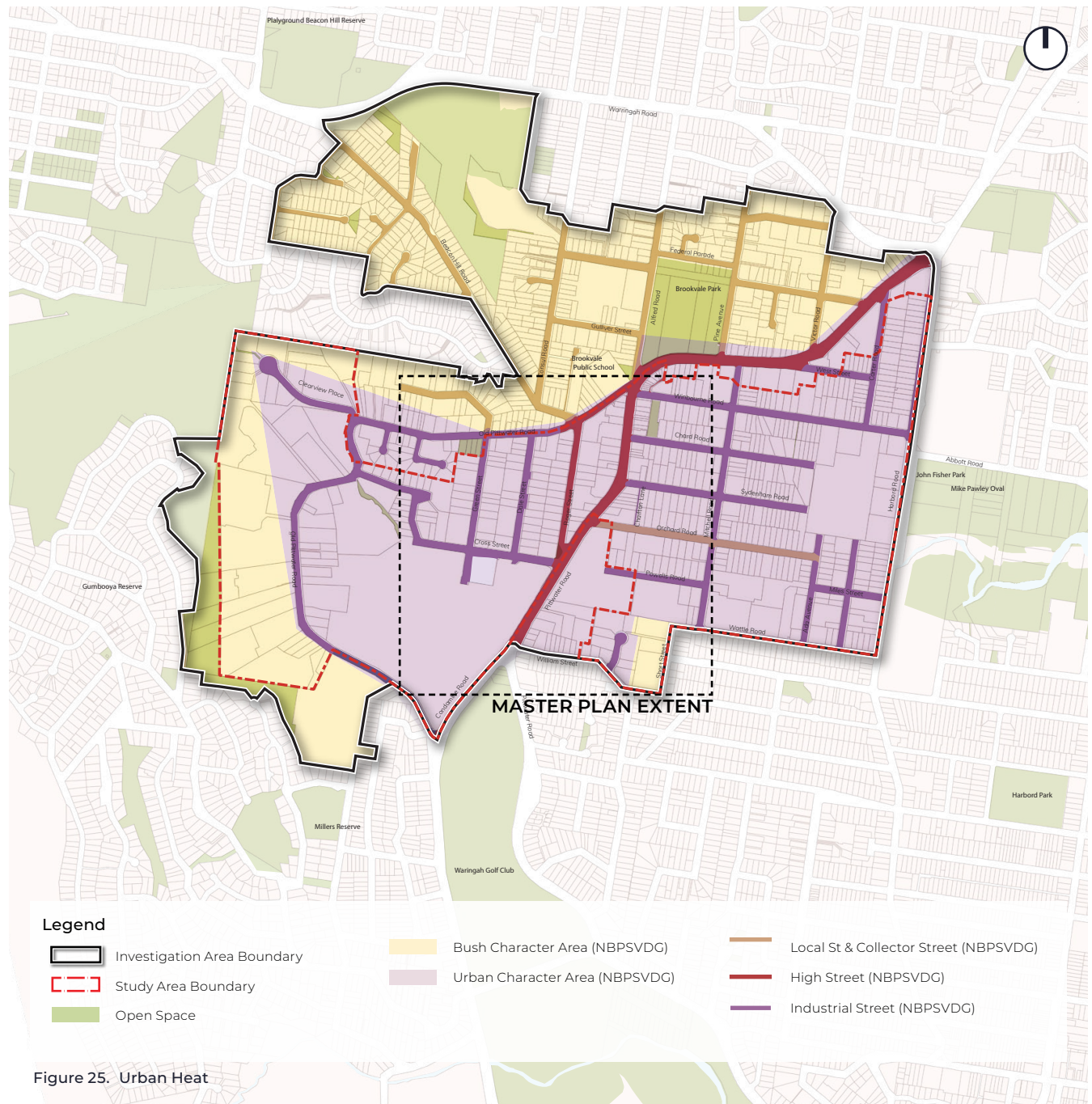
- High streets: 45%;
- Industrial streets: 50%;
- Collector streets: 40%;
- Local streets: 40%

In response, the proposed layout explores provision of setbacks and assumes management of services such as electricity poles currently restricting additional street tree planting, namely transition to ABC lines on Industrial streets and undergrounding of electricity services on High streets.

The proposed tree plantings should also consider a mix of large evergreens and deciduous species for enhanced cooling effect. Further, where wildlife corridor connections are proposed, species should be primarily native. In combination with the above, the implementation of WSUD principles, passive irrigation and permeable surfaces (where feasible) will contribute to the soil hydration, and help reduce urban heat island effect.

It is also noted that the Greening Strategy for Brookvale currently identifies nine Green Link streets where a number of strategies will be implemented and monitored to support future strategic planning work for Brookvale. The Structure plan and typical sections assume these strategies are to be applied to all streets of similar typology across Brookvale.

It is anticipated the nominated Green Links could expand to include the new High street (West of the Town Square) as this would allow the implementation and monitoring strategies in new developments where trees are not existing (note some WSUD strategies identified in the Water Management Strategy cannot be implemented where we have existing trees).



7. Industrial Areas

This chapter looks at industrial areas and its proposed uplift through an increase of height. Industrial areas play a significant role in retaining and strengthening employment land within Brookvale. Targeted overshadowing analysis was undertaken to help understand the impacts to sensitive areas such as open spaces and low density residential.

7.1 Industrial Areas

Brookvale is characterised by its employment land, particularly its industrial land which supports a range of industrial urban services, manufacturing businesses and creative uses, including activities that are unable to locate in other zones.

To help support a strong employment precinct in the wider Brookvale study area, uplift has been provided through an increase of heights to allow for the expansion of much-needed floorspace to support employment activity and changing industry needs.

Increasing heights will support more efficient use of land within an established industrial area, facilitating expansion and renewal without compromising the primary employment function of the precinct. This approach supports the delivery of fit for purpose industrial buildings that can accommodate larger floorplates, servicing requirements and adaptable internal layouts, while remaining competitive in a changing economic context.

Height uplift also enables industrial areas to evolve through improved built form quality, sustainability outcomes and better integration with surrounding streets and public spaces. By supporting intensified employment activity within the existing industrial footprint, additional height contributes to the long term viability of industrial lands and reinforces their role as a key employment and economic asset.

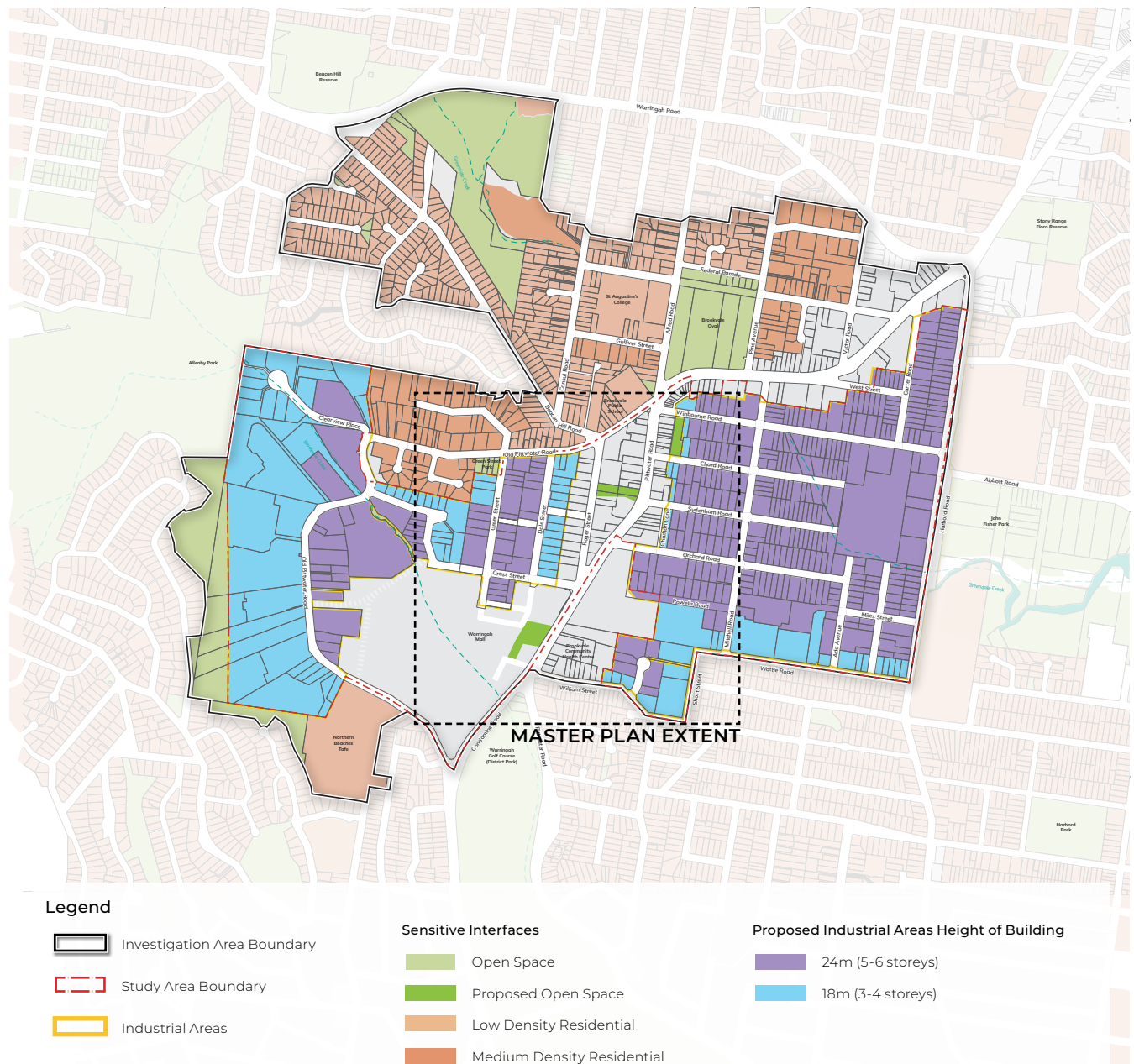


Figure 26. Industrial Areas Height Approach

Sensitive Areas Overshadowing Analysis

Heights for the industrial area have been determined through an overshadowing analysis to ensure they adequately respond to and protect adjacent open spaces and low density residential interfaces.

Two sensitive areas have been identified, heights between 12m-24m have been considered and applied where appropriate.



- Legend
- | | |
|---------------------------------|--------------|
| E2 - Commercial Centre | Height - 24m |
| E3 - Productivity Support | Height - 18m |
| E4 - General Industrial | |
| R2 - Low Density Residential | |
| R3 - Medium Density Residential | |
| RE1 - Public Recreation | |
| RE2 - Private Recreation | |
| MU1 - Mixed Use | |

Base Case Scenario - 24m Heights



Figure 27. June 21st at 9am

Proposed Scenario - Reduced Heights



Figure 28. June 21st at 9am

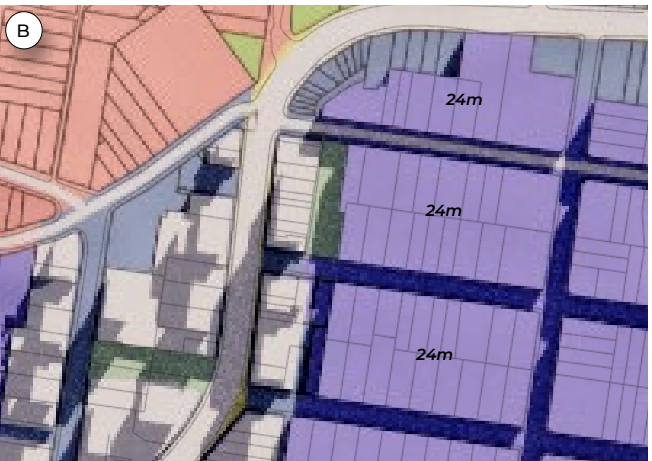


Figure 29. June 21st at 10am



Figure 30. June 21st at 10am

Proposed Scenario - Varied Height

Heights reduced to 18m for industrial area that share a sensitive interface along the south.

This reduces overshadowing to residential areas and Open spaces to the south of Industrial areas.



Figure 31. June 21st at 9am



Figure 32. June 21st at 10am



Figure 33. June 21st at 11am

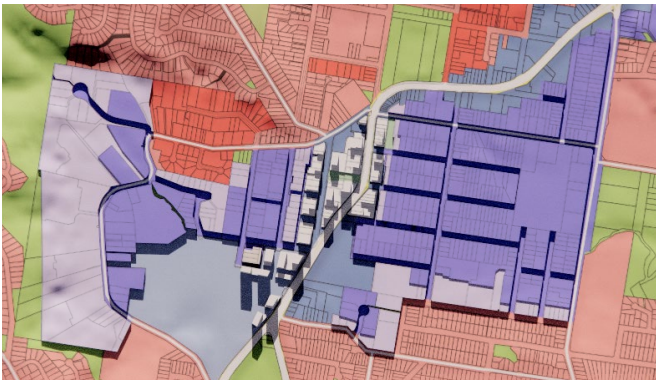


Figure 34. June 21st at 12pm

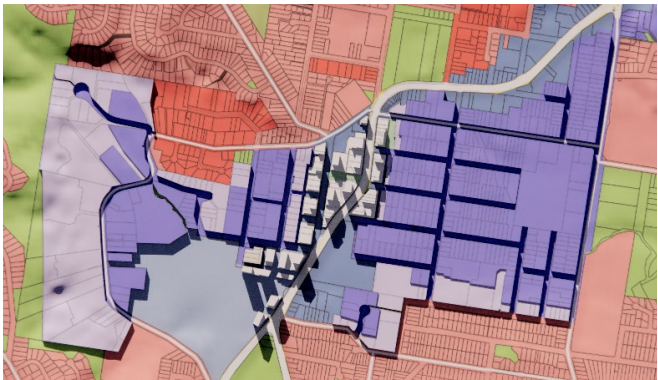


Figure 35. June 21st at 1pm

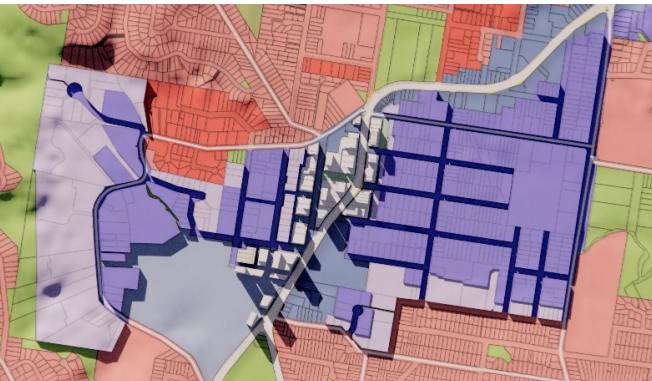


Figure 36. June 21st at 2pm

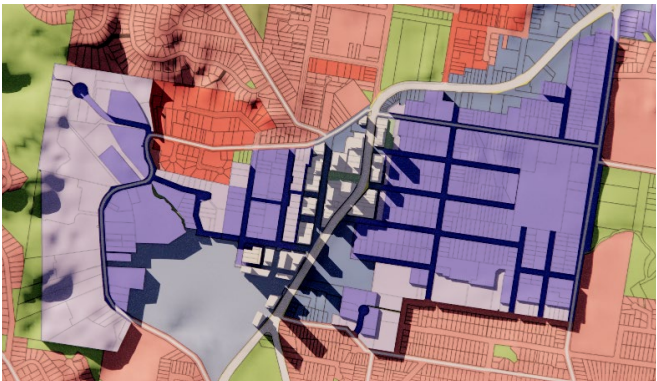
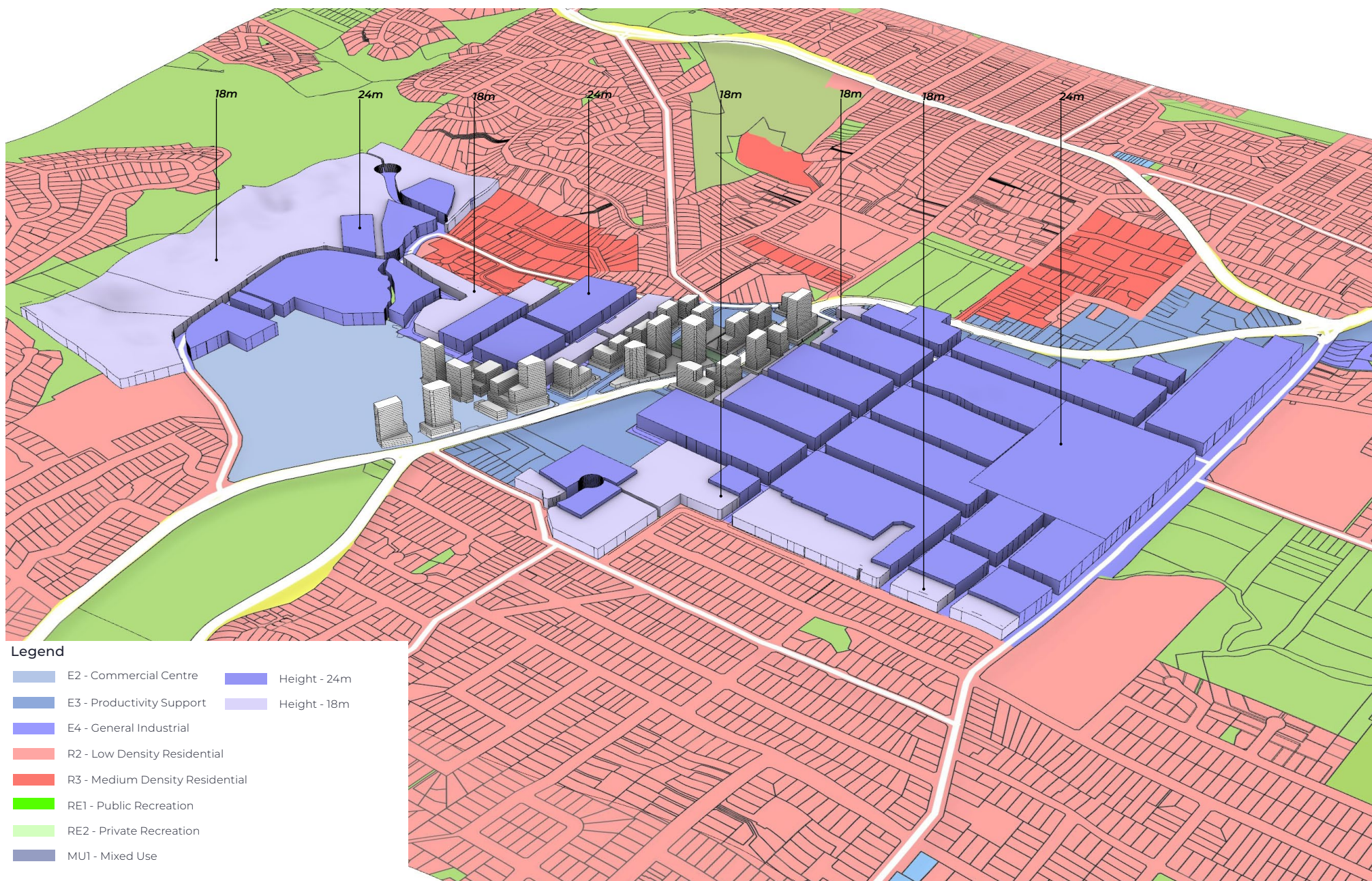


Figure 37. June 21st at 3pm

Legend

E2 - Commercial Centre	Height - 24m
E3 - Productivity Support	Height - 18m
E4 - General Industrial	
R2 - Low Density Residential	
R3 - Medium Density Residential	
RE1 - Public Recreation	
RE2 - Private Recreation	
MU1 - Mixed Use	



8. The Master Plan and Public Domain

This chapter introduces the Master Plan and provides guidance on the character and location of the public domain which includes a revitalised street network, future open spaces and community spaces.

8.1 Illustrative Master Plan

The following illustrative masterplan presents a 15 year vision for Brookvale, building on the design principles. Future mixed use buildings look to retain the employment uses at ground level providing flexibility to attract a wide range of employment uses while integrating new open spaces and a high-quality public realm. Overall, the masterplan seeks to achieve a balance between housing, productivity and open space:

- 1 Provide at least 5,000 m² of open space for a Town Square adjacent to the B-Line bus stop.
- 2 Provide at least 2,000 m² of community floor space through a Community Centre adjacent to the Town Square.
- 3 Provide at least 3,200 m² of open space between Roger Street and Pittwater Road to provide amenity to the north.
- 4 Provide at least 1,000 m² of community floor space through a Community Centre adjacent to the new northern open space.
- 5 Transform Winbourne Car Park into an open space of at least 2,600 m² to provide amenity to the eastern side of Pittwater Road.
- 6 Reallocate parking spaces from Winbourne Car Park and provide an increased amount of public parking in basement of new development.
- 7 Extend Dale Street as a new high-street, continuing the Brookvale grid via an attractive ground plane.
- 8 Provide a new east-west street between Roger Street and Dale Street to improve block permeability.
- 9 Provide a new rear laneway increasing the permeability and access to the rear of block along Pittwater Road.
- 10 Incorporate new street tree planting to enhance urban tree canopy cover and provide separated cycling infrastructure to encourage active transport.
- 11 Support mixed-use buildings accommodating a mix of showroom uses, commercial, creative and maker spaces on the ground level.
- 12 Encourage opportunities for a standalone commercial office building along Cross Street.



Figure 38. Brookvale Illustrative Master Plan

8.2 Land Use and Urban Structure

The urban structure for Brookvale has been refined taking into consideration ownership, likely amalgamation patterns and the operational requirements based on land use including circulation and access to development blocks.

There are a series of breaks across long north-south running blocks to create a compact grid offering a permeable network of new connections and active laneways.

Proposed open spaces, between Roger Street and Pittwater Road and between Winbourne Road and Chard Road provide pedestrian through-site connectivity via improved open space and public domain amenity.

Legend

	Investigation Area Boundary		Industrial with Additional Permitted Uses
	Study Area Boundary		Productivity Support
	Separate HDA SSD		Commercial Core
	Riparian Zone (Creek)		B-Line Stop
	Area Subject to Long Term Investigation		B-Line Route
	Potential Future Town Square		400m/800m From B-Line Stop
	Community / Civic Uses		Improved Crossing
	Public Open Space		Proposed High Street
	Proposed Open Space		Proposed Street
	Environmental Conservation		Proposed Laneway
	Low Density Residential		Primary Active Frontage
	Medium Density Residential		Secondary Active Frontage
	Mixed Use		Proposed and Existing Green Link
	Commercial Core / Mixed Use		Potential Future Through-site Links
	Industrial		Potential Powells Road Extension

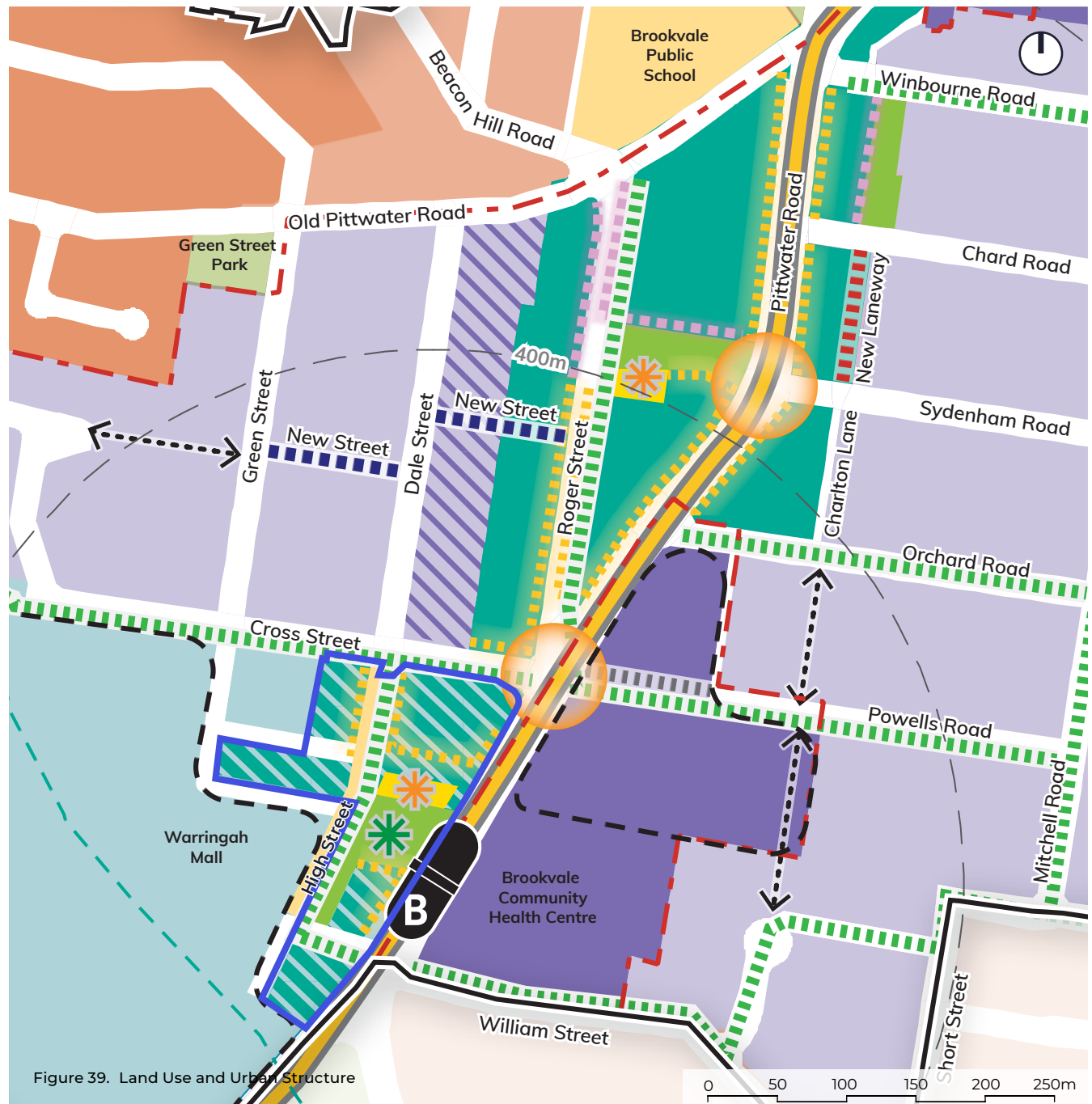


Figure 39. Land Use and Urban Structure

8.3 Movement and Connectivity Network

The proposed movement network for the Brookvale Structure Plan aims to create a more permeable street network, reduce car reliance and promote access to the B-Line stops on Pittwater Road.

A new street is proposed between Roger Street, Dale Street and Green Street to improve traffic movement and block permeability for both vehicles and pedestrians.

A new laneway is proposed to provide vehicular and service access to new mixed use buildings along Pittwater Road and establish a continuous laneway link between the Orchard Road and the new open space.

The proposed cycling network is aligned with the recommendations arising from Council's 2020 Bike Plan, including new or enhanced bicycle connections along key streets such as Cross Street, Roger Street, Pittwater Road and Orchard Road.

Legend

	Investigation Area Boundary		Existing Cycling (Local/Regional - NB Bike Plan 2020)
	Study Area Boundary		Proposed Cycling (Local/Regional - NB Bike Plan 2020)
	Separate HDA SSD		Proposed Dual One-Way Cycling Lane
	Public Open Space		Potential Future Through-site Links
	Proposed Open Space		Proposed one-way street (Bitzios, 2026)
	B-Line Route		Proposed left-out only (Bitzios, 2026)
	Local Bus Routes		Improved Crossing
	B-Line Stop		Proposed signalised intersection (Bitzios, 2026)
	Proposed High Street		Proposed Basement Parking
	Proposed Street		Public Parking
	Proposed Laneway		
	Proposed road modifications/widening (Bitzios, 2026)		



Figure 40. Movement and Connectivity Network

8.4 Cross Street East

Design Considerations

- Industrial street typology with Active Transport in line with the Northern Beaches Public Space Vision and Design Guidelines (NBPSVDG)
- 2.5m wide footpath (NBPSVDG) to the north.
- 4m wide shared path (south) combining both pedestrian and bicycle movements.
- Enlarged 2.5m wide nature strip (north) for improved conditions to existing mature trees, with opportunity for understorey planting in response to this street being nominated as a Wildlife Corridor connection.
- Generous nature strip to the south to provide separation from the carriageway and accommodate new tree and understorey plantings, for improved amenity and support for wildlife biodiversity.
- Retention of tree planting to the north and new plantings to the south help achieve 50% canopy cover target (Greening Strategy - Brookvale Structure Plan Report).
- Opportunity for passive irrigation/WSUD in the new south plantings via use of castellated kerb to verge edge.
- Opportunity for roof water collection for passive irrigation (south section).

Legend

Footpath / Shared Path

Carriageway

Deep Soil



Road Fall



Opportunity for Passive Irrigation/Rain Garden



Opportunity for Roof Water Collection to Existing Trees

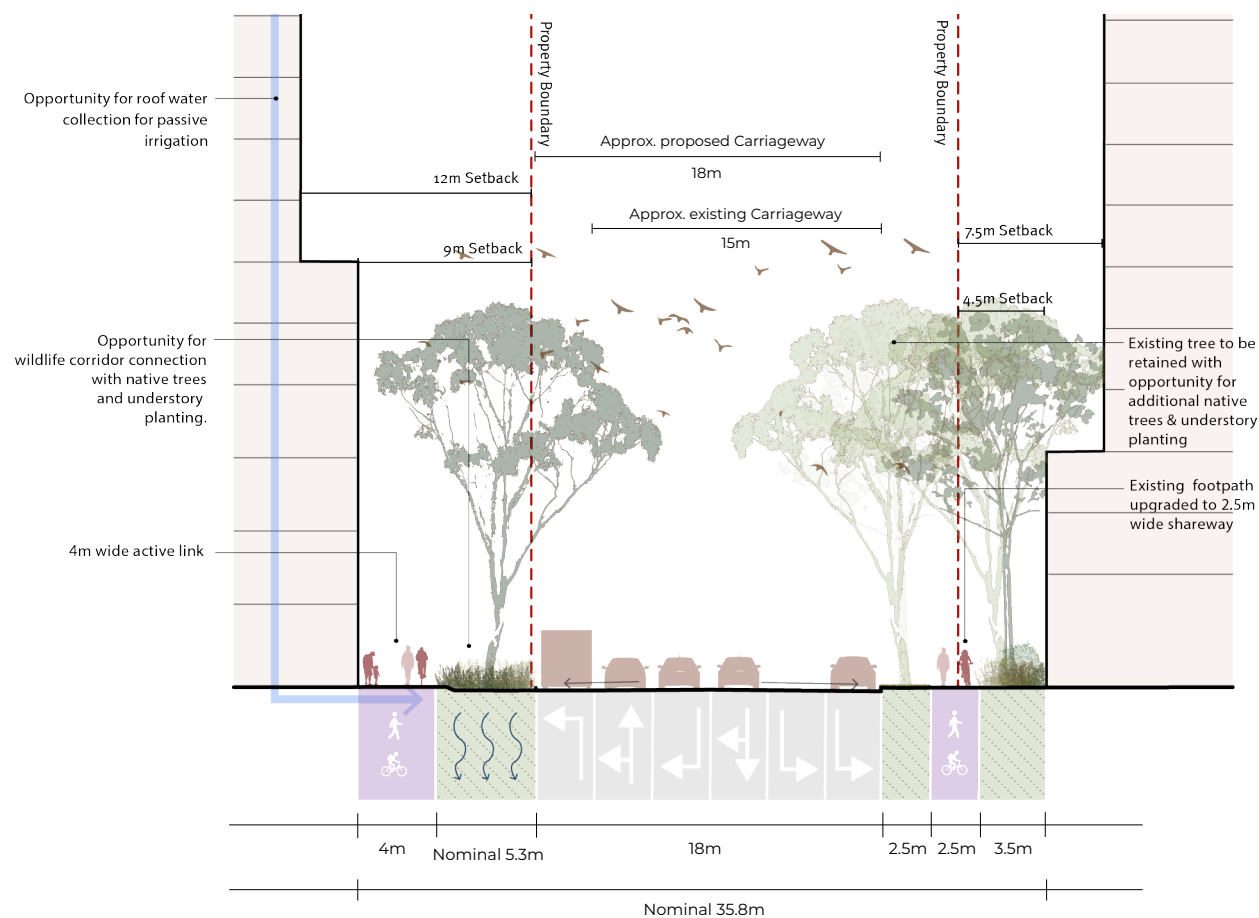


Figure 41. Section - Cross Street East

Street sections are indicative only and will evolve with further detailed investigation.

8.5 Cross Street West

Design Considerations

- Industrial street typology with Active Transport in line with the Northern Beaches Public Space Vision and Design Guidelines (NBPSVDG)
- 2.5m wide footpath (NBPSVDG) to the north.
- 4m wide shared path (south) combining both pedestrian and bicycle movements.
- Retention of 1.5m wide nature strip and mature street trees (north) for existing trees, with opportunity for understorey planting in response to this street being nominated as a Wildlife Corridor connection.
- Generous nature strip to the south to provide separation from the carriageway and accommodate new tree plantings, for improved amenity and support for wildlife biodiversity.
- Retention of tree planting to the north and new plantings to the south help achieve 50% canopy cover target (Greening Strategy - Brookvale Structure Plan Report).
- Opportunity for passive irrigation/WSUD in the new south plantings via use of castellated kerb to verge edge.
- Opportunity for roof water collection for passive irrigation (south section).

Legend

	Footpath / Shared Path
	Carriageway
	Deep Soil
	Road Fall
	Opportunity for Passive Irrigation/Rain Garden
	Opportunity for Roof Water Collection to Existing Trees

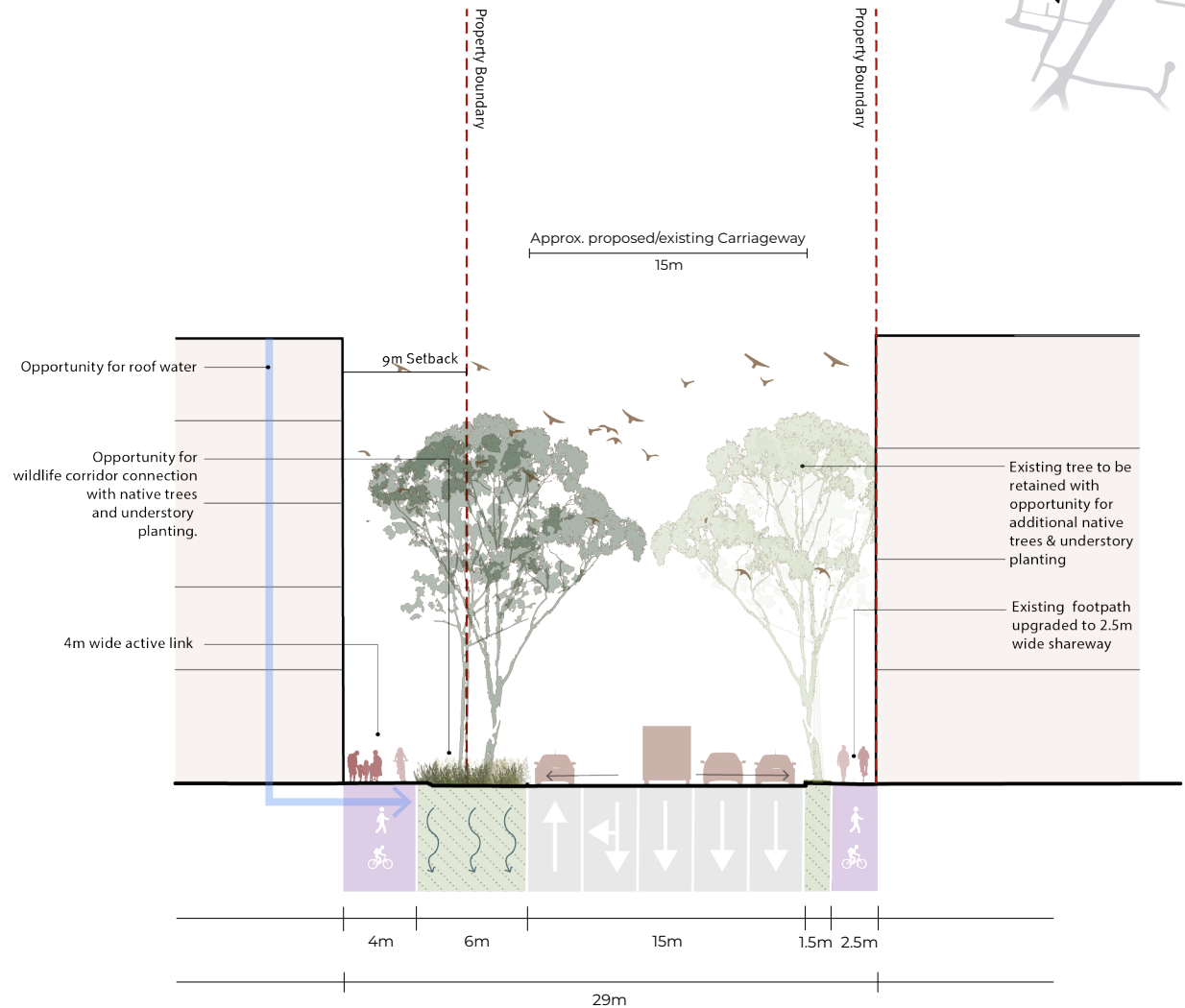


Figure 42. Section - Cross Street West

Street sections are indicative only and will evolve with further detailed investigation.

8.6 Roger Street

Design Considerations

- High Street Typology (with Active Transport) in line with the NBPSVDG.
- 3m footpath and dedicated by-directional cycleway to the west.
- 4m shared path to the east
- 4.5m & 3.2m nature strips (east & west respectively) keep existing conditions to allow retention of existing trees.
- A 3m set back on each side of the street allows for proposed footpath/shareway to be positioned clear of existing trees to be retained.
- Additional tree planting along verges and proposed blisters along parking lane, to help achieve 45% canopy cover goal (Greening Strategy - Brookvale Structure Plan Report).
- Opportunity for passive irrigation/WSUD in new plantings via use of castellated kerb to verge edge.
- Opportunity for roof water collection for passive irrigation to existing trees where WSUD principles may not be achievable.
- Potential for permeable paving within parking areas.
- Assumed undergrounding of electricity services or ABC as noted in Brookvale Structure Plan Greening Strategy.
- Consider the partial closure of Roger Street to the south, no left turn in from Pittwater Road.

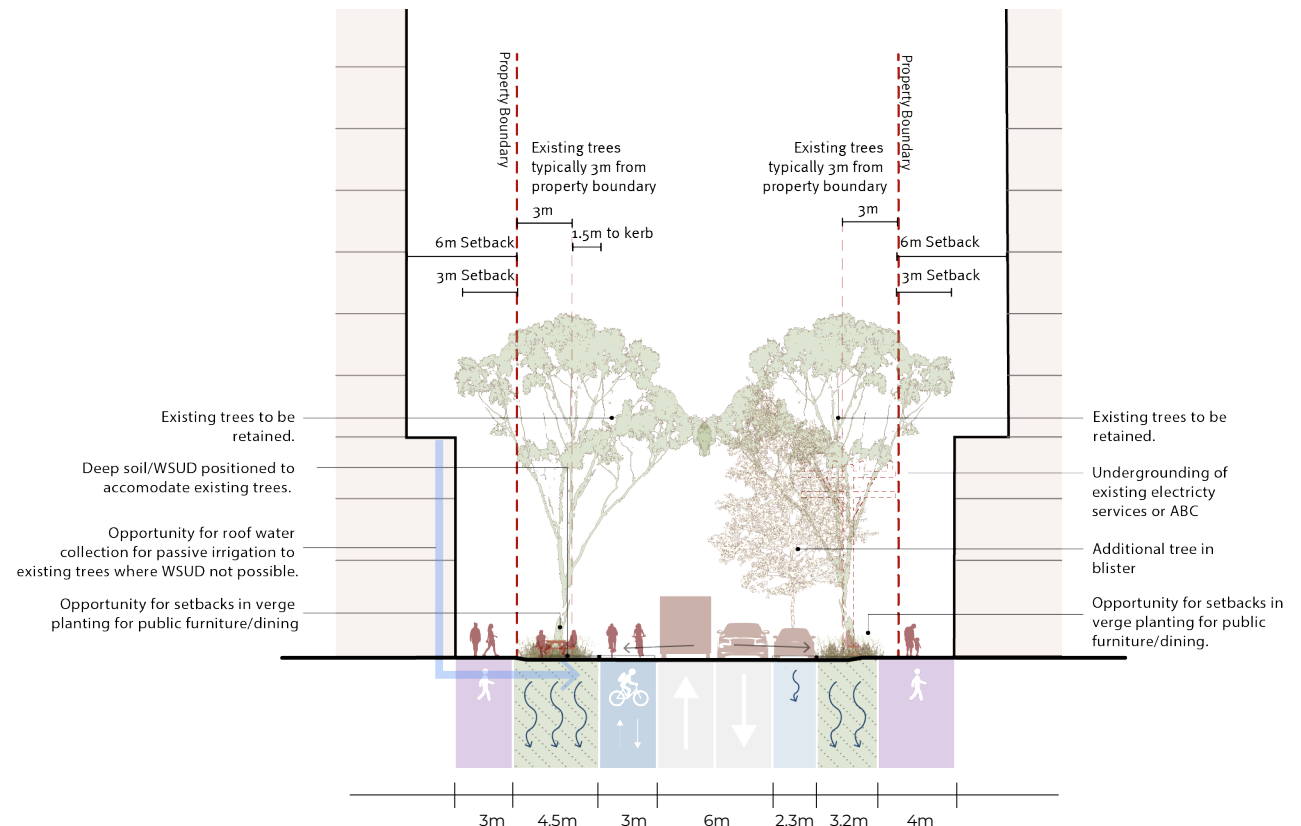


Figure 43. Section - Roger Street

Street sections are indicative only and will evolve with further detailed investigation.

8.7 Pittwater Road North

Design Considerations

- High Street Typology (with Active Transport) in line with the NBPSVDG.
- 3m footpath and dedicated by-directional cycleway to the west.
- 2.5m footpath and dedicated 1.5m one-way cycleway to the east.
- 2.8m wide planted verge for tree/hedge planting (illustrated on eastern side of road section).
- Where bus stops are required, the planted verge gives place to a paved node with public furniture (seats, bins, light poles, bike rails) at the same level of the footpath (shown on western side of road).
- Opportunity for passive irrigation/WSUD in new plantings via use of castellated kerb to verge edge.
- Opportunity for roof water collection for passive irrigation to existing trees where WSUD principles may not be achievable.
- No existing above ground electricity services on Pittwater Road.

Legend

	Footpath		Deep Soil
	Cycleway		Opportunity for Passive Irrigation/Rain Garden
	Bus Lane		Road Fall
	Carriageway		

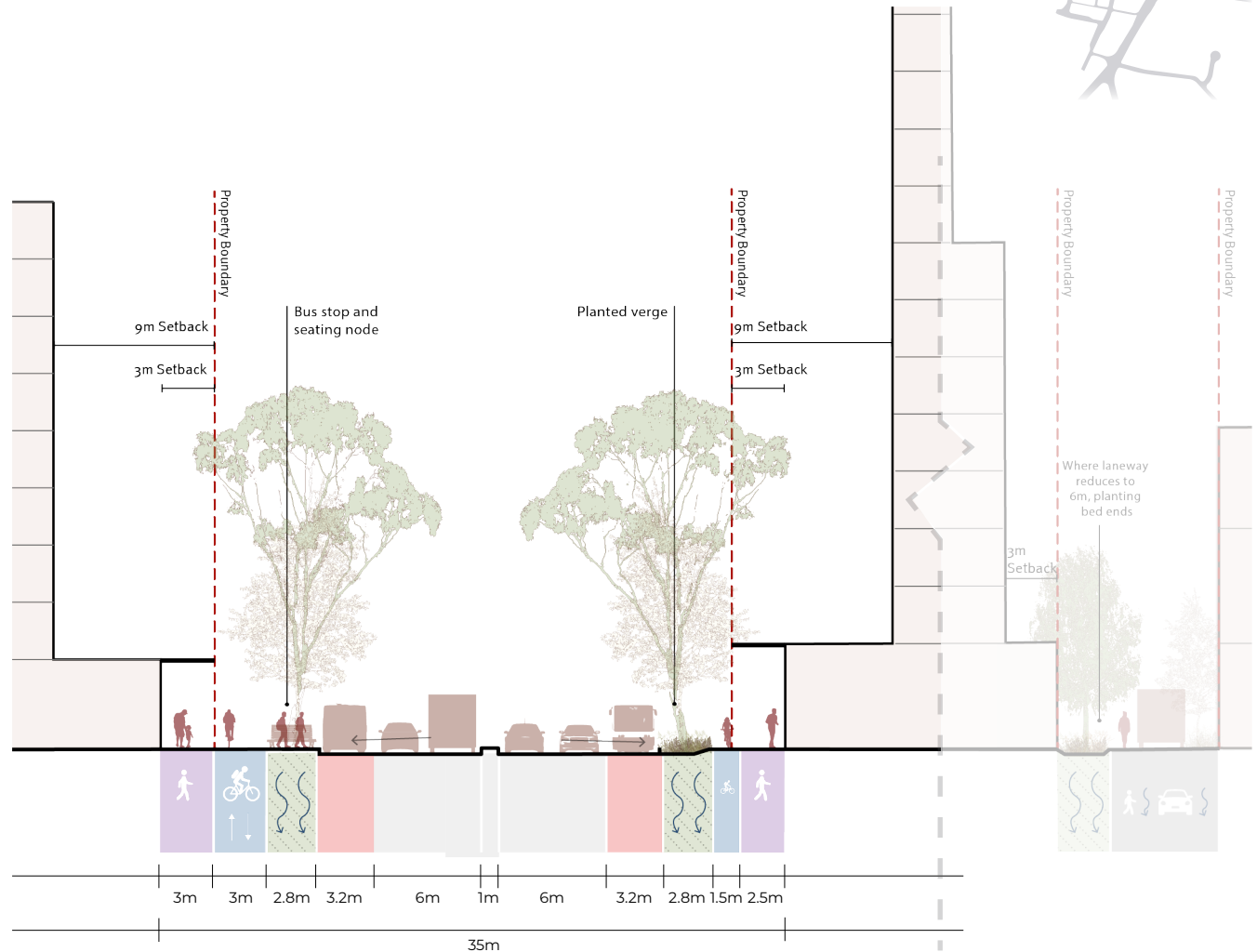


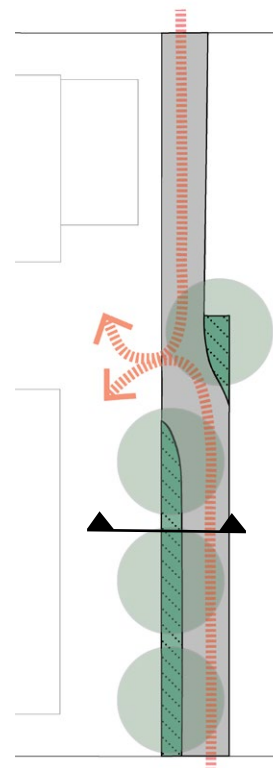
Figure 44. Section - Pittwater Road North

Street sections are indicative only and will evolve with further detailed investigation.

8.8 New Laneway East of Pittwater Road

Design Considerations

- 6m shared zone.
- Meandering approach to:
 - slow down vehicles
 - prevent wind corridor effect
 - additional visual interest
 - provide additional room for vehicles manoeuvring in/out of the loading areas
(vehicular section set to the east with bend aligned with access to loading area)
- Opportunity for use of permeable pavers within the laneway.
- Planter/tree to the east provides a point of interest to the streetscape and drivers exiting the loading area.



Indicative plan

Legend

- | | | | |
|--|------------------------|--|--|
| | Permeable Shared Zone | | Opportunity for Passive Irrigation/Rain Garden |
| | Deep Soil | | Road Fall |
| | Entry to Loading Zones | | |

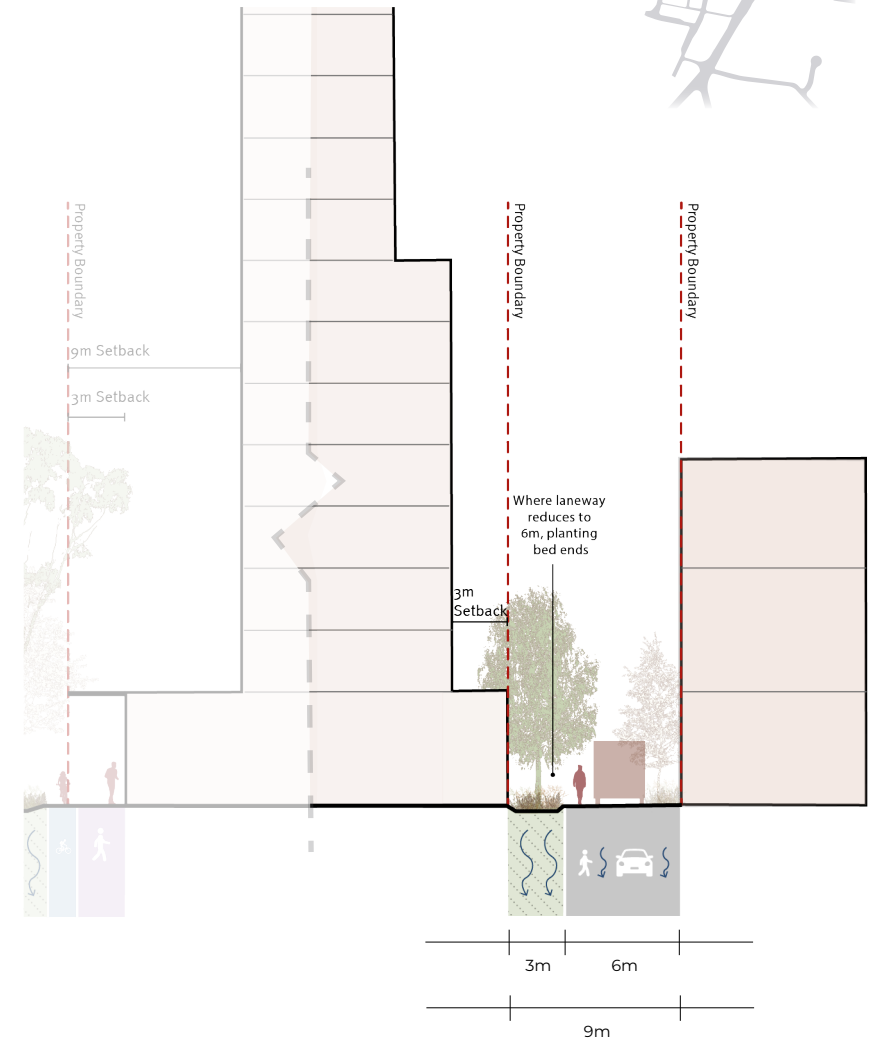


Figure 45. Section - New Laneway East of Pittwater Road

Street sections are indicative only and will evolve with further detailed investigation.

8.9 New Street

Design Considerations

- Assumed Industrial street typology (NBPSVDG)
- 4m wide shared path to the north combines both pedestrian and bicycle movements
- 3m wide footpath to the south in line with Roger Street
- 1.5m & 3.2m wide planted verge (south and north respectively), to provide separation from the parking/ carriageway and accommodate new tree plantings.
- Proposed tree planting along both verges and blisters to contribute to 50% canopy cover target (Greening Strategy - Brookvale Structure Plan Report).
- Opportunity to alternate planted verge with:
 - accessible parking (north)
 - furniture elements (east end)
 - driveways to underground carparking and/or loading bays (north and south) to keep Roger street clear, with maximised activation

Legend

Footpath / Shared Path	Deep Soil (Min. 1.5m deep)
Carriageway	→ Road Fall
Parking Bays with Tree Blisters	

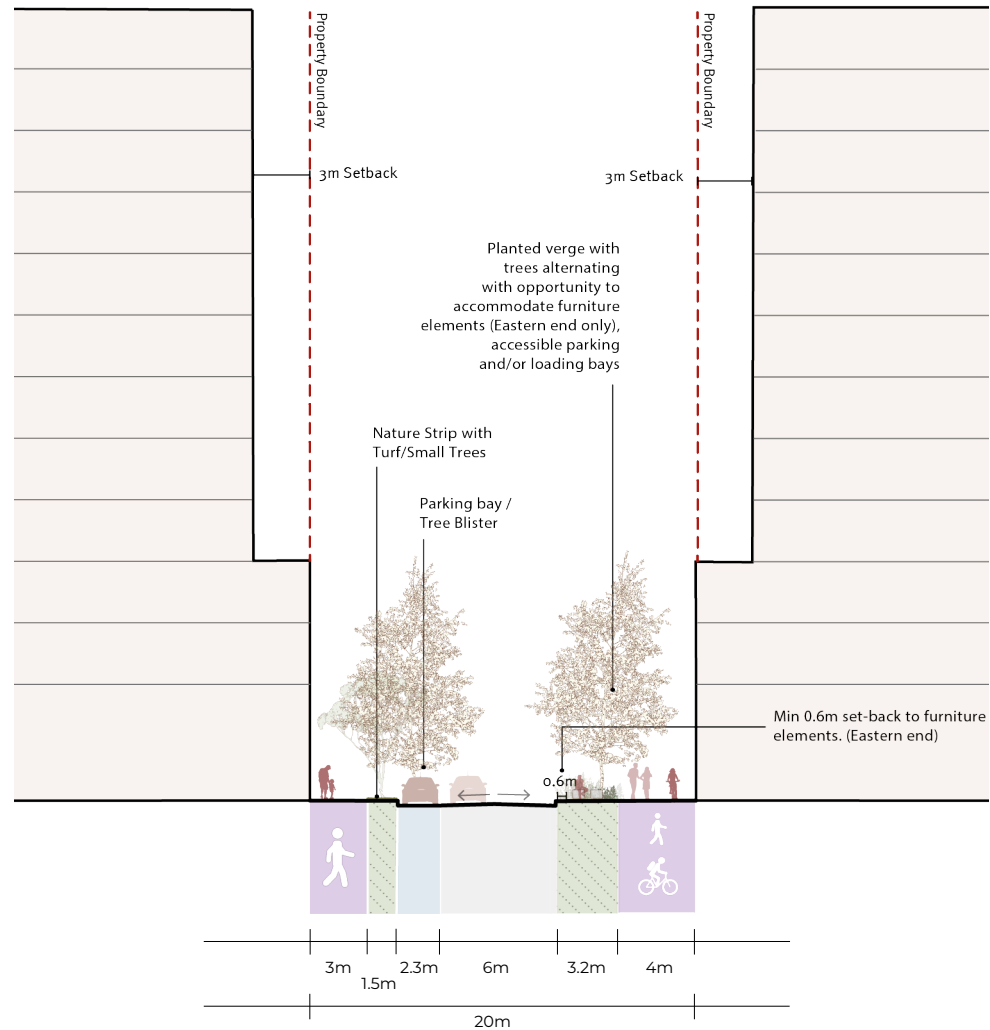


Figure 46. Section - New Street

Street sections are indicative only and will evolve with further detailed investigation.

8.10 New High Street

Design Considerations

- Proposed High Street Typology (proposed new street not considered in NBPSVDG).
- 4m clear footpath to the west.
- 3m wide verge section for tree/hedge planting, public furniture (seats, bins, light poles, bike rails) and access from parking bays.
- Use of predominantly evergreen trees to filter views of surrounding development. Additional trees in parking bays and promenade help achieve 45% canopy cover target.
- Opportunity for passive irrigation/WSUD via use of castellated kerb to verge edge.
- Potential for permeable paving within parking areas
- 6.4m wide clear town square promenade (N-S). It is assumed that the town square area will be a slow zone for pedestrians and dismounted cyclists to mitigate any conflicts between the different users and create a safe environment for outdoor activation.
- 3.5m clear path adjoining building for pedestrians and dismounted cyclists.
- 11.5m seating & planting pocket / WSUD
- Assumed undergrounding of electricity services for new development.

Legend

	Footpath		Deep Soil
	Town Square /Promenade Paving		Semi Permeable Paving/ Planting
	Carriageway		Opportunity for Passive Irrigation/Rain Garden
	Permeable Parking Bays with Tree Blisters		Road Fall



Figure 47. Section - New High Street

Street sections are indicative only and will evolve with further detailed investigation.

8.11 Pittwater Road South and Town Square

Design Considerations

- High Street Typology (with Active Transport) in line with the NBPSVDG.
- 3m wide verge section for tree/hedge planting, public furniture (seats, bins, light poles, bike rails) and access to bus lanes (west)
- Existing conditions to the east, with access to the bus lanes being made under the BCHC building awning in a cyclist dismount zone.
- Use of predominantly evergreen trees to filter views of Pittwater Road.
- Opportunity for passive irrigation/WSUD via use of castellated kerb to verge edge outside of bus stop areas.
- Continuous path of travel across the Town Square on main connection to the B-Line with opportunities for public art, water features, light installations.
- It is assumed the town square area will be a slow zone for pedestrians and dismounted cyclists to mitigate any conflicts between the different users and create a safe environment for outdoor activation.
- Continuous seating wall creates opportunity for rest/meeting point, delineates the Town Square lawn and allows the introduction of topography to what is a generally flat area.
- Clear views to the Community Building in the background
- No existing above ground electricity services on Pittwater Road



- Footpath
- Town Square Paving
- Bus Lane
- Carriageway
- Deep Soil
- Opportunity for Passive Irrigation/Rain Garden
- Road Fall

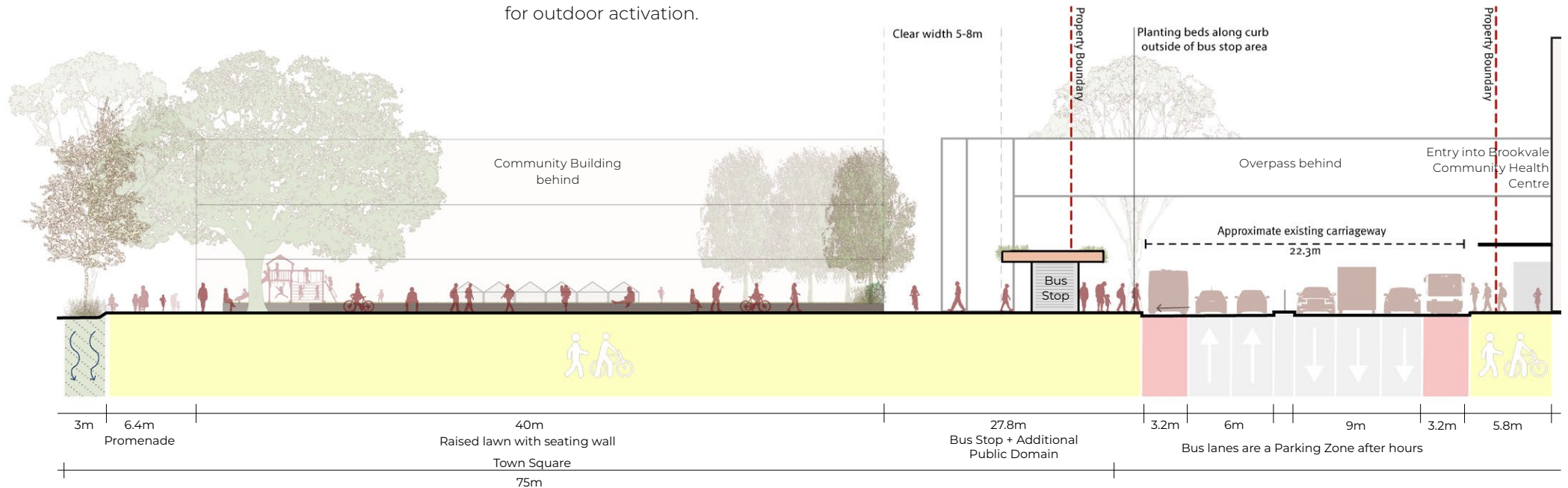


Figure 48. Section - Pittwater Road South and Town Square

Street sections are indicative only and will evolve with further detailed investigation.

8.12 Open Space Network

Open Space Network

The existing provision of public open space in Brookvale is limited. The planned future growth of Brookvale therefore requires new open spaces to support the needs of the community.

A new town square is proposed for the community on the Warringah Mall site. The location of this public place aims to build upon the natural, green grid in Brookvale, take advantage of its frontage to the B-Line stop. It is envisaged that this space will be a highly activated place for workers, residents and visitors to meet and dwell, and for potential community events such as markets to be held.

A central open space is proposed between Roger Street and Pittwater Road centrally located along this corridor of growth. This new Roger Park will offer a secluded place away from Pittwater Road for workers and residents to gather and linger and creates additional frontage for activation adding to the vibrancy of Brookvale.

To further support the existing and future open space network, Winbourne Car Park will be transformed into a northern open space, envisioned to be an active link between Winbourne Road and Chard Road that allows workers, residents and visitors to gather and linger.

Legend

	Investigation Area Boundary		Proposed Open Space
	Study Area Boundary		1 Town Square
	Separate HDA SSD		2 Roger Park
	Proposed Street		3 Winbourne Park
	Proposed Laneway		
	Potential Future Connection		



8.13 Town Square

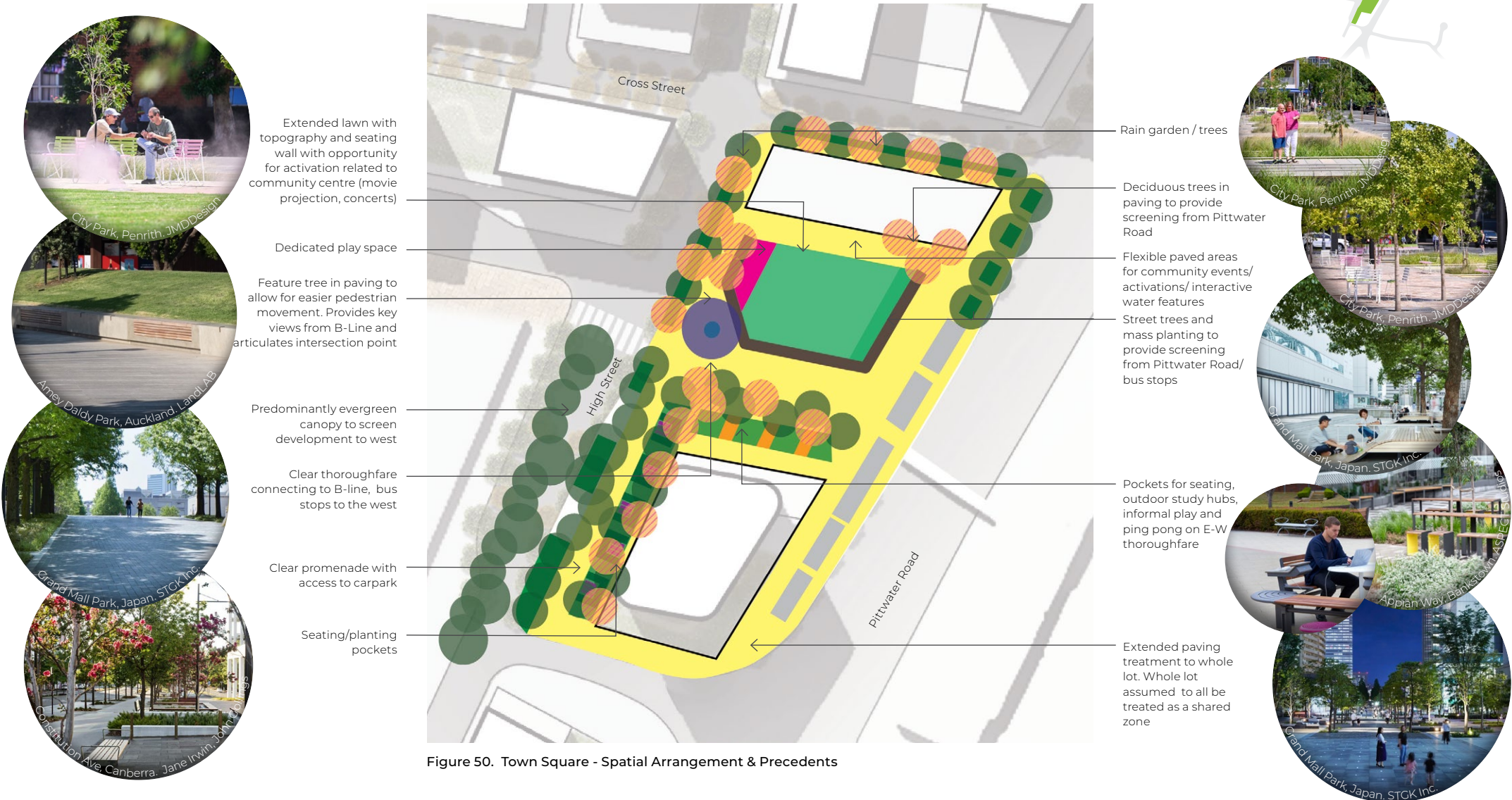


Figure 50. Town Square - Spatial Arrangement & Precedents

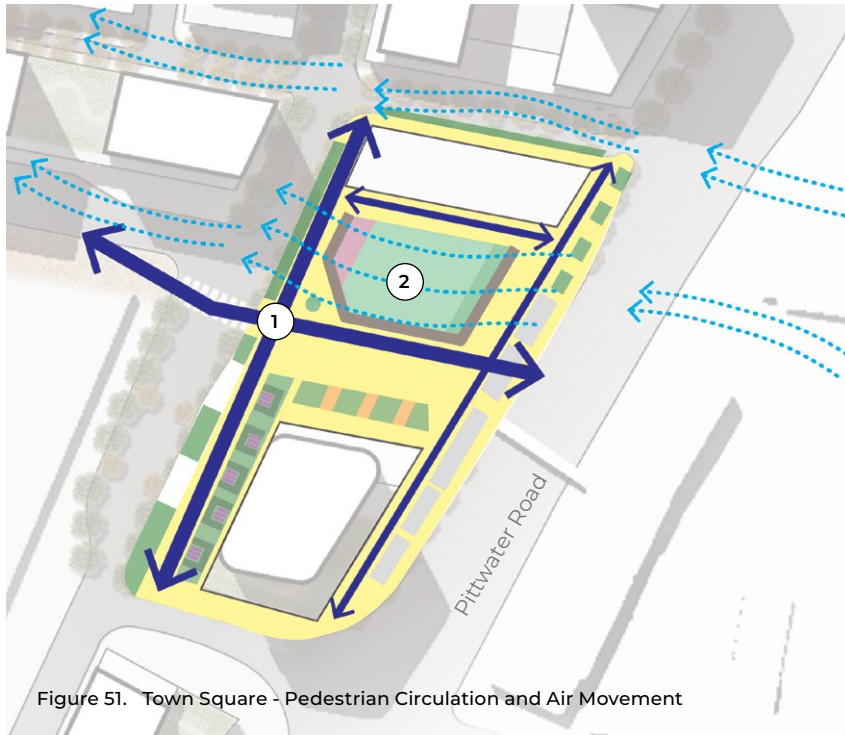


Figure 51. Town Square - Pedestrian Circulation and Air Movement

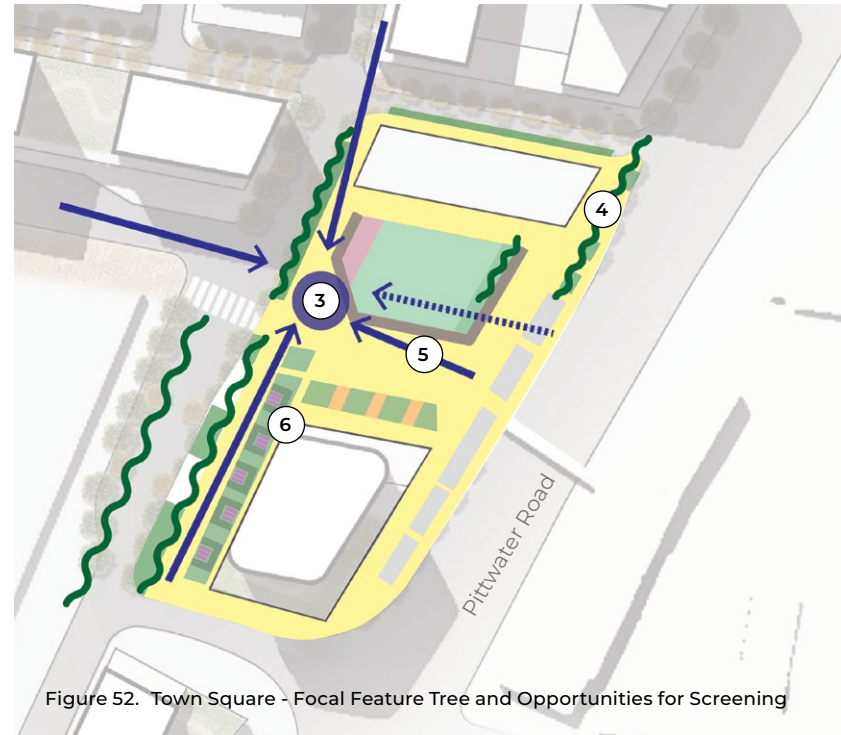


Figure 52. Town Square - Focal Feature Tree and Opportunities for Screening

- ① The main circulation routes are structured by clear thoroughfares with a promenade quality (east-west and north-south). The overall town square is unified by a consistent ground plane treatment, materiality, planting approach and structural axis.
- ② The town square east-west configuration allows air to move freely across, capitalising on the cooling effect of the afternoon sea breeze. Generally the main area of the square connects to other east-west oriented streets and existing laneways. The inclusion of water features / water jets / mist fountains could emphasise this effect and create additional amenity/thermal comfort, increasing the space's usability through warmer periods.
- ③ A focal feature tree provides a visual point of interest from all areas of the town square and approaching routes (incl. the B-Line overpass).
- ④ There are opportunities for screening along Pittwater Road and the High Street.
- ⑤ Views are kept clear for easy way-finding and the scale of the paved surface responds to the intensity and frequency of pedestrian movement crossing the town square.
- ⑥ A variety of spaces of different scales respond to different user groups, desire lines, movement speeds and allow for different functions and activations. This includes the opportunity for al-fresco.



Figure 53. Town Square - Areas for Possible Activation

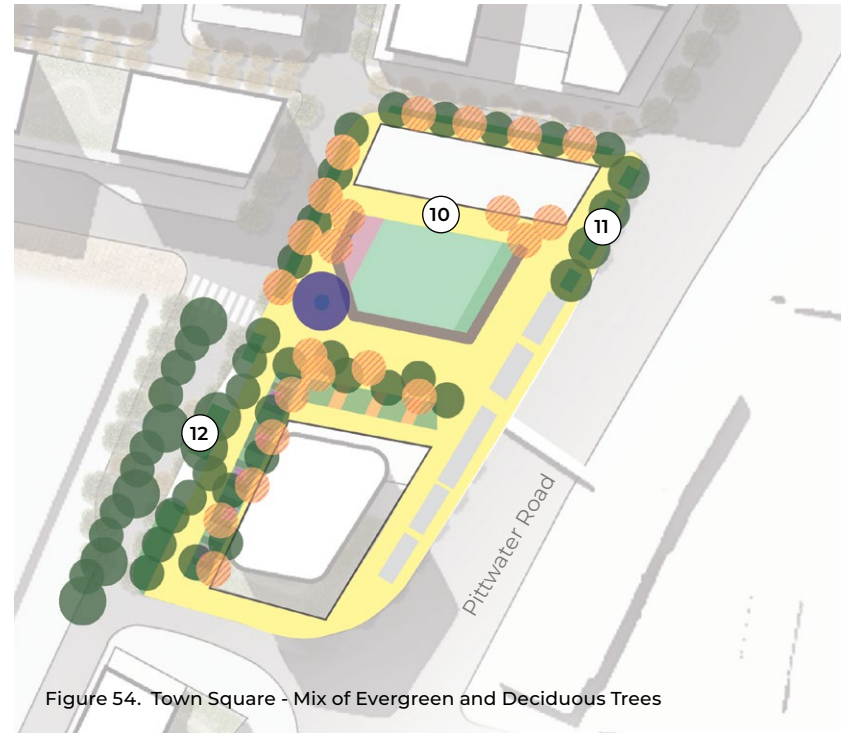
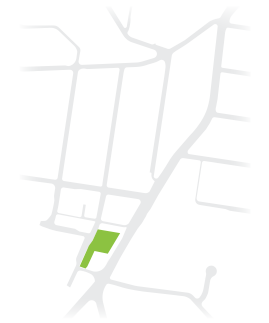


Figure 54. Town Square - Mix of Evergreen and Deciduous Trees



- ⑦ A generous and regular shaped lawn area provides a flexible space in the heart of the town square. Provision of a seating edge to the south introduces topography providing separation from the main east-west thoroughfare and creates opportunity for activations such as movie projections and concerts. Additional activations such as markets could be delivered in the paved area north of the lawn, all in close proximity to the community building.
- ⑧ The section south of the east-west thoroughfare has opportunity to accommodate a sequence of subspaces for activities such as seating, outdoor study hubs, informal play and ping pong. These activations are envisioned to be extended to the SW corridor.

- ⑨ A play space could be integrated, benefiting from the topography to buffer this area from High Street.
- ⑩ It is envisioned the paved sections of the ground plane can be flexible and accommodate different uses throughout the day & night - interactive water features, lighting, artwork.
- ⑪ Predominantly evergreen trees screen future developments to the west and Pittwater Road. Deciduous trees allow winter sun to reach the centre of the town square and introduce seasonal aspects.
- ⑫ Opportunity for WSUD including rain gardens and permeable paving along the road edges, parking, and in pocket areas of the town square, contributing to a connected deep soil network.

8.14 Roger Park



Deciduous canopy to north to allow for winter sun and seasonal aspects

Open space treatment extends onto Roger Street

Planted buffer with passive irrigation and predominantly evergreen canopy to screen buildings to west

Bleachers with seating, study nooks and informal embankment play

Planters to bleachers for additional shade

Opportunity for Community Space to open out onto open space

Central open lawn level to southern building.



Stairs for north/south connectivity and continuous access to bleachers and lawn

Planting and seating continues along upper terrace as an avenue, providing clear views between Pittwater Road and Roger Street and opportunities to gather and dwell

A feature tree with seating punctuates the space, articulating the intersection point and establishing a meeting point

Planted buffer with passive irrigation offers noise and wind break from Pittwater Road

Street tree planting along Pittwater Road extends park onto street and offers additional separation to the road, providing safety for pedestrians and additional shade

Avenue canopy guides pedestrians from pedestrian crossing to through link

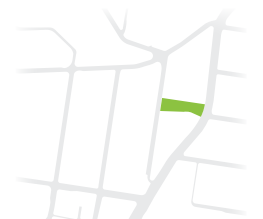


Figure 55. Roger Park - Spatial Arrangement & Precedents



Figure 56. Roger Park view



Figure 57. Roger Park -Zoning

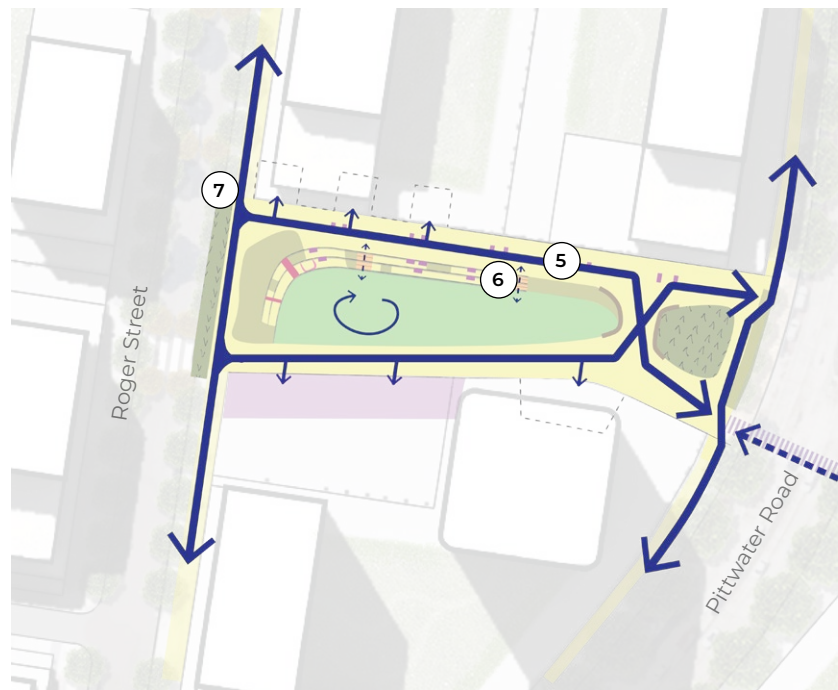


Figure 58. Roger Park - Pedestrian Circulation

- ① A primarily paved surface wraps around the central area, guiding pedestrian movement and making the space accessible from all frontages, while responding to dominant desire lines.
- ② Locating the more active central area closer to Roger Street provides seclusion from the noise and traffic of Pittwater Road. A planted area and street trees to the east enhances the feeling of seclusion, providing a visual buffer to the industrial areas to the east.
- ③ A large terrace is provided to the south, maximising usable open space while maintaining east-west connectivity and creating opportunity for activation.
- ④ A set of bleachers addresses the change in topography and provides a passive space wrapping around the central lawn. Informal play elements, furniture and tree planting for shade compliment this area.

- ⑤ A second terrace is provided to the north, maintaining east-west connectivity and access to businesses north of the open space.
- ⑥ The two terraces are connected with stairs, allowing the bleachers to be accessed from both terraces and secondary N-S connectivity.
- ⑦ To the west, a planted strip along the street's nature strip (in lieu of car parking) and on the edge of the park provides separation to the Roger Street carriageway. A similar approach is proposed for Pittwater Road. This reclamation of the street into the open space consolidates the two areas and invites users into the open space.



Figure 59. Roger Park - Trees and Air Flow



Figure 60. Roger Park - Feature Trees, Views and Buffer

- 9 Strategies to mitigate east-west wind corridor effect include planted buffers with leafy trees to the east and west ends of the open space and the use of topography. The permeable nature of the open space aims at a slow air flow to capitalise on the cooling effect of the afternoon sea breeze.

- 10 Deciduous trees along the northern edge of the space allow winter sun to reach the central and southern areas of the open space, including the lawn.
- 11 The central lawn opens long views across the site for a sense of scale and improved activation of the adjoining façades.
- 12 2 x focal trees provide a visual point of interest and intuitive wayfinding on how to navigate the space.

8.15 Winbourne Park



Figure 61. Winbourne Park - Spatial Arrangement & Precedents



Figure 62. Winbourne Park view

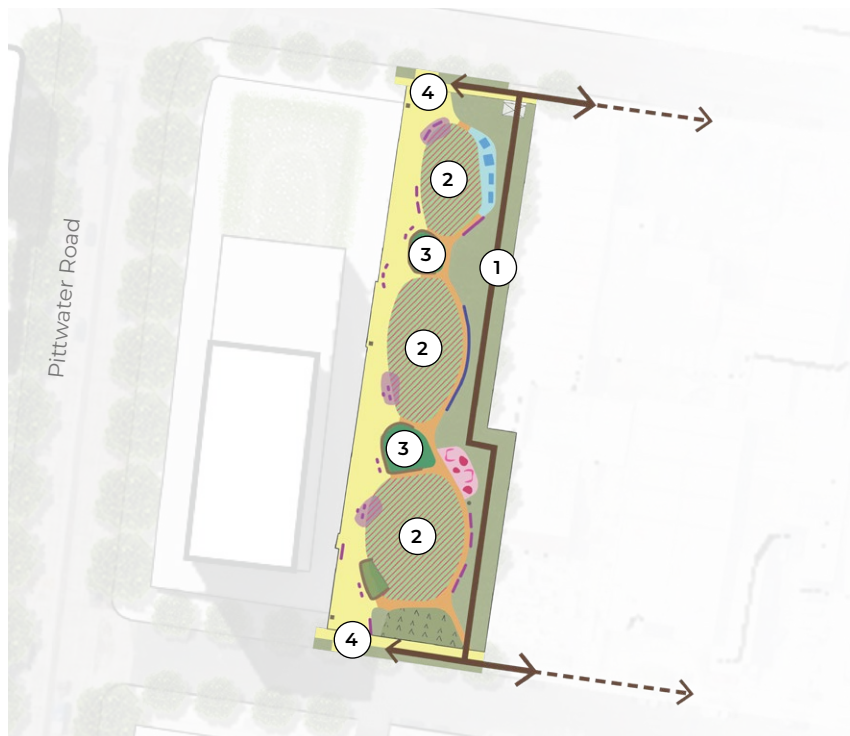


Figure 63. Winbourne Park - Deep Soil and Spatial Configuration

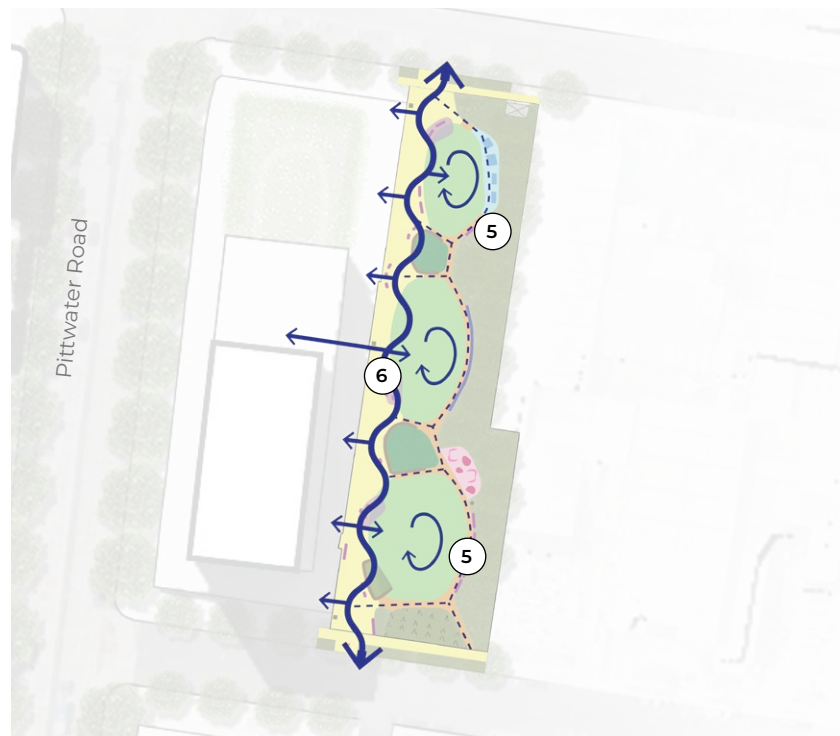


Figure 64. Winbourne Park - Paving and Circulation

- ① A semi-linear N-S arrangement considers the proposed basement car park and establishes a N-S deep soil link, connecting the nature strips in Winbourne Road and Chard Road to support a living soil system. The main circulation routes and plantings that can grow in reduced soil profiles overlap the basement car park, with tree plantings being located within deep soil or raised planters.
- ② The space is structured into 3 areas to break up its linear configuration, provide multiple spaces with different ambience and flexibility to accommodate multiple user groups, small groups gatherings and activations.
- ③ Raised planters with trees articulate the different spaces and introduce topography with opportunities for seating, building on the site's complexity.

- ④ The paving treatment is extended to the street to expand the open space and in combination with wide entry points, invite visitors into the Open Space.
- ⑤ A secondary pavement treatment allows users to circulate at a slower pace along the more shaded and secluded Eastern edge of the open space and provide access to additional seating, play and fitness areas.
- ⑥ Placement of furniture elements in a non-linear arrangement allows users to meander through the space and creates opportunities to explore active frontages to the built form and edge activations for seating, markets, coffee/food trucks



Figure 65. Winbourne Park - Canopy

- ⑦ Deciduous trees punctuate the space closer to the built form introducing seasonal aspects, additional shade and cooling effect in summer.
- ⑧ Evergreen trees to the East create a buffer to the industrial precinct with opportunity for key openings for long views from the built form.
- ⑨ A large feature tree to the South provides a focal point in the larger lawn area and assists with creating some separation from the street.
- ⑩ Passive irrigation with opportunity for WSUD is proposed at the lower end of the open space to promote infiltration.



Figure 66. Winbourne Park - Views and Screening

- ⑪ N-S views are kept clear for easy wayfinding, with the raised planters filtering views to each subspace.
- ⑫ E-W views are kept clear within the space for passive surveillance, with the industrial precinct being screened by evergreen tree plantings to the East.

9. Built Form Approach

This chapter introduces the built form approach that informed the outcomes of the Master Plan. It outlines the approach to height, scale, setbacks, active frontages, and parking options.

9.1 Density

Density

The proposed densities within Brookvale are in response to feasibility including opportunities to provide for public infrastructure and affordable housing, aligning density where heights can be appropriately accommodated. The densities proposed also build on the significant opportunity to maximise on existing access to transport the B-line transport hub as well as services provided by Warringah Mall.

Higher densities of 4.0:1 up to 5.4:1 FSR are located strategically to devlier new open spaces or provide public parking. There is then a transition of density from 3.3:1 up to 3.8:1 where a logical amalgamation can result in a feasible development.

Legend

	Investigation Area Boundary		3.3:1 FSR
	Study Area Boundary		3.4:1 FSR
	Separate HDA SSD		3.5:1 FSR
	Main Road		3.8:1 FSR
	Public Open Space		4.0:1 FSR
	Riparian Zone (Creek)		5.4:1 FSR
	Proposed Open Space, Street and Laneway		
	Potential Future Through-site Links		



9.2 Height

Height

The proposed distribution of height has sought to focus taller heights up to 25 storeys toward the B-line stop and on larger unfragmented sites along Pittwater Road. Taller heights have been strategically focused to reinforce key connections, open spaces and prominent sites. This aims to support a greater focus of activity around the future core of Brookvale, which is anchored by the proposed town square adjacent to the B-line stop, the new open spaces between Roger Street and Pittwater Road and the open space between Winbourne Road and Chard Road.

Proposed heights then transition down to 10-14 storeys for the remainder of the mixed use areas along Pittwater Road and Roger Street which will establish a new built form setting along this corridor. A combination of heights in Brookvale create a visually distinct and varied skyline with opportunities for coastal views to the east and south east.

Legend

	Investigation Area Boundary		20-25 Storeys
	Study Area Boundary		15-19 Storeys
	Separate HDA SSD		12-14 Storeys
	Public Open Space		9-11 Storeys
	Proposed Open Space		7-8 Storeys
	Riparian Zone (Creek)		3-6 Storeys
	Proposed Street		1-2 Storeys
	Proposed Laneway		No height indicated on lots already developed
	Potential Future Through-site Links		

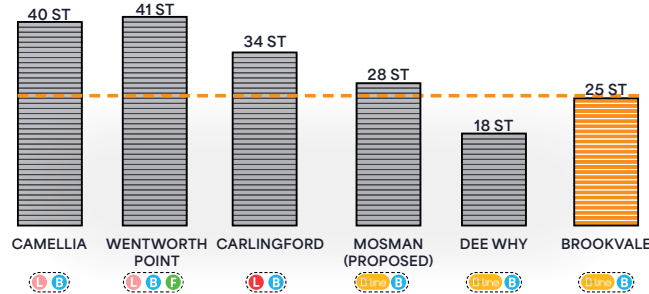


Height Principles



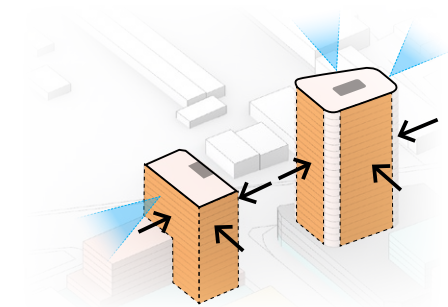
Height strategically focused

- Density is strategically focused on key sites
- Height is placed to reinforce key connections, destinations and prominent sites.
- Additional floorspace will incentivise the delivery of key public infrastructure and open space including the town square, laneway and through site links.



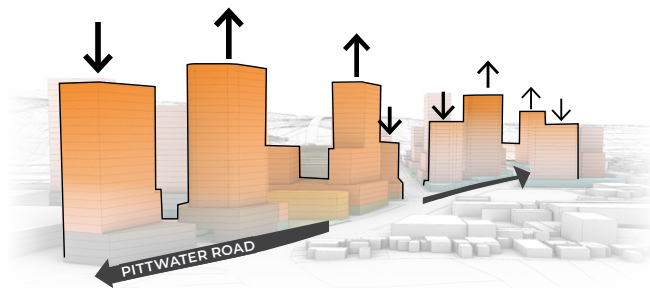
Maximum heights benchmarked to comparable centres

- The heights in Brookvale are comparable to centres with similar levels of amenity.
- The selected existing or future town centres have been selected due to their access to the lightrail which provides similar service frequencies to the B-line in Brookvale.



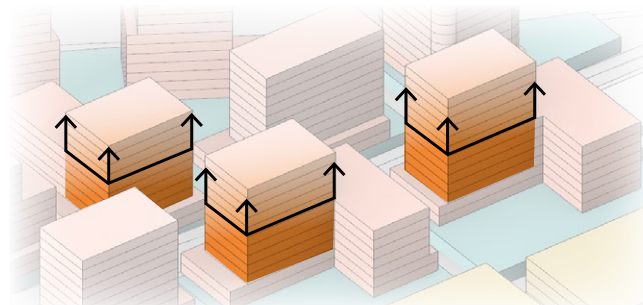
Ensure adequate separation between towers

- Providing generous separation between towers will provide a greater opportunity for view sharing.
- Towers will take advantage of coastal views and maximise solar access from the north.
- Introducing a combination of central and side core tower typologies will enable building variation.



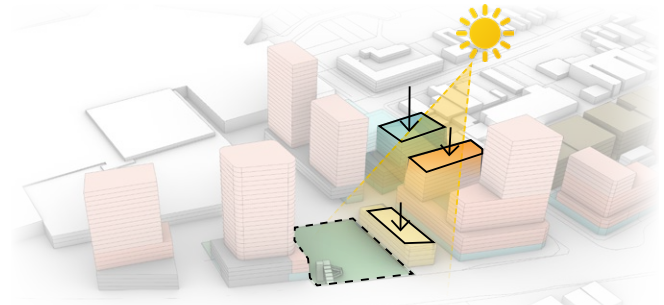
Height variation along Pittwater Road

- Diversity of built form is put forward to create height variation along Pittwater Road.
- Heights along Pittwater Road will vary between 10 storeys and 25 storeys.



Average increase of height from previous work to make sites feasible

- Increasing average heights better aligns the master plan with feasibility outcomes.
- Increasing heights may give sites the potential of delivering affordable housing.



Solar access to the proposed open spaces

- Variation and lower heights to the north can allow greater solar access into proposed open spaces.
- This variation also allows different uses and buildings to look into the proposed open spaces.

9.3 Street Wall

Street Wall

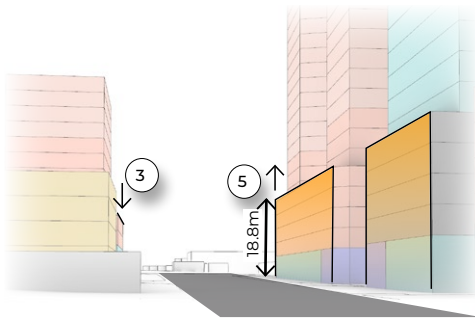
In combination with new podium and tower setbacks, a range of street wall heights are proposed for Brookvale. The following street wall heights are in response to site specific conditions which look to increase amenity for residents, reinforce a human scale, provide a better interface to existing industrial lands or to encourage sleeving / above ground car parking on certain sites.

Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  Separate HDA SSD
-  Public Open Space
-  Riparian Zone (Creek)
-  5-6 Storeys
-  4 Storeys
-  3 Storeys
-  1 Storey

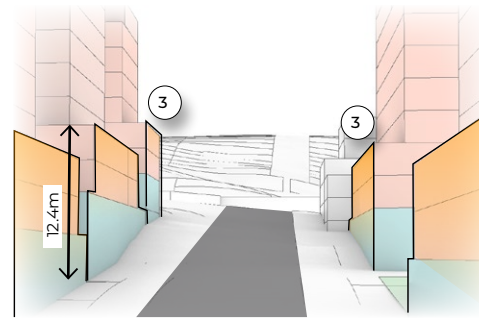


Street Wall Design Considerations



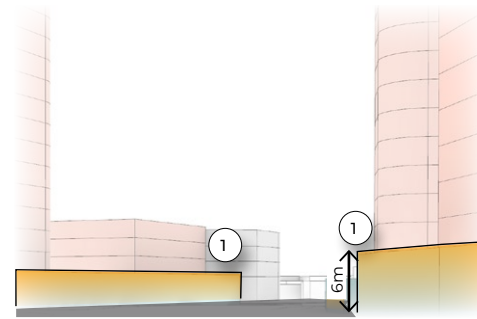
Cross Street

- A street wall height 5-6 Storey Street wall has been defined for the corner of Cross Street and Pittwater Road. This condition is to permit single use commercial buildings as well as allow for sleeved above ground car parking which is likely to be required due to the flooding constraints south of Cross Street.



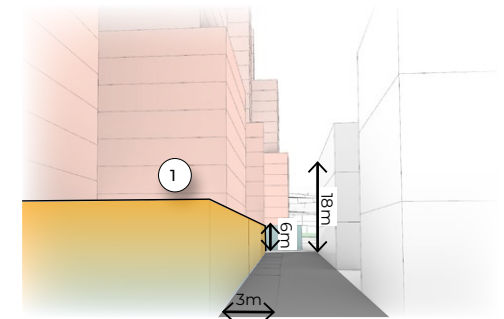
Roger Street

- A street wall height of 3 storeys is proposed along Roger Street creating a human scale street where there is greater passive surveillance of the street, through block links and open space from residents.
- This street wall height also offers greater activation of the street through a broader mix of employment spaces, such as maker-spaces, creative enterprises, artisanal food and drink producers and small-scale retail that will co-locate with residential uses above.



Pittwater Road

- A street wall height of 1 storey of up to 6m is proposed along the northern Pittwater Road corridor. This is to provide the opportunity for flexible additional non-residential floor space using mezzanines. Approved development in Brookvale has seen two storeys within a 6m floor-to-floor.
- This street wall height aims to support a range of showrooms for vehicles and home materials and fixtures while providing a distinct separation to residential uses above.
- This condition seeks to improve the amenity of residents living along Pittwater Road while maintaining high exposure to business requiring larger floorplates at ground level.



Charlton Lane

- Charlton Lane will increase by 3m through a podium setback to allow for a wider laneway and greater separation between the proposed mixed-use and industrial area.
- As Charlton Lane sits at the rear of the properties of Pittwater Road, the street wall height of 1 storey will continue and the 6m will allow for flexibility with non-residential uses.
- The eastern side of Charlton Lane will interface with industrial uses which will have heights up to 18m.

9.4 Podium Setbacks

Podium Setbacks

- A 3m setback along Pittwater Road and Roger Street.
- A 9m and 4.5m setback along Cross Street is proposed to allow street widening and to accommodate improved pedestrian and cycling connections, landscaping and tree planting.
- A 8m setback is provided along Pittwater Road for the Warringah Mall site.
- A 6m and 9m rear setback is provided to the blocks along Pittwater Road to accommodate a new north-south laneway between Chard Road and Sydenham Road.
- A 3m rear setback is provided to the block along Charlton Lane to provide a wider laneway.

Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  Separate HDA SSD
-  Public Open Space
-  Proposed Open Space
-  0m
-  3m
-  4.5m
-  6m
-  8m
-  9m

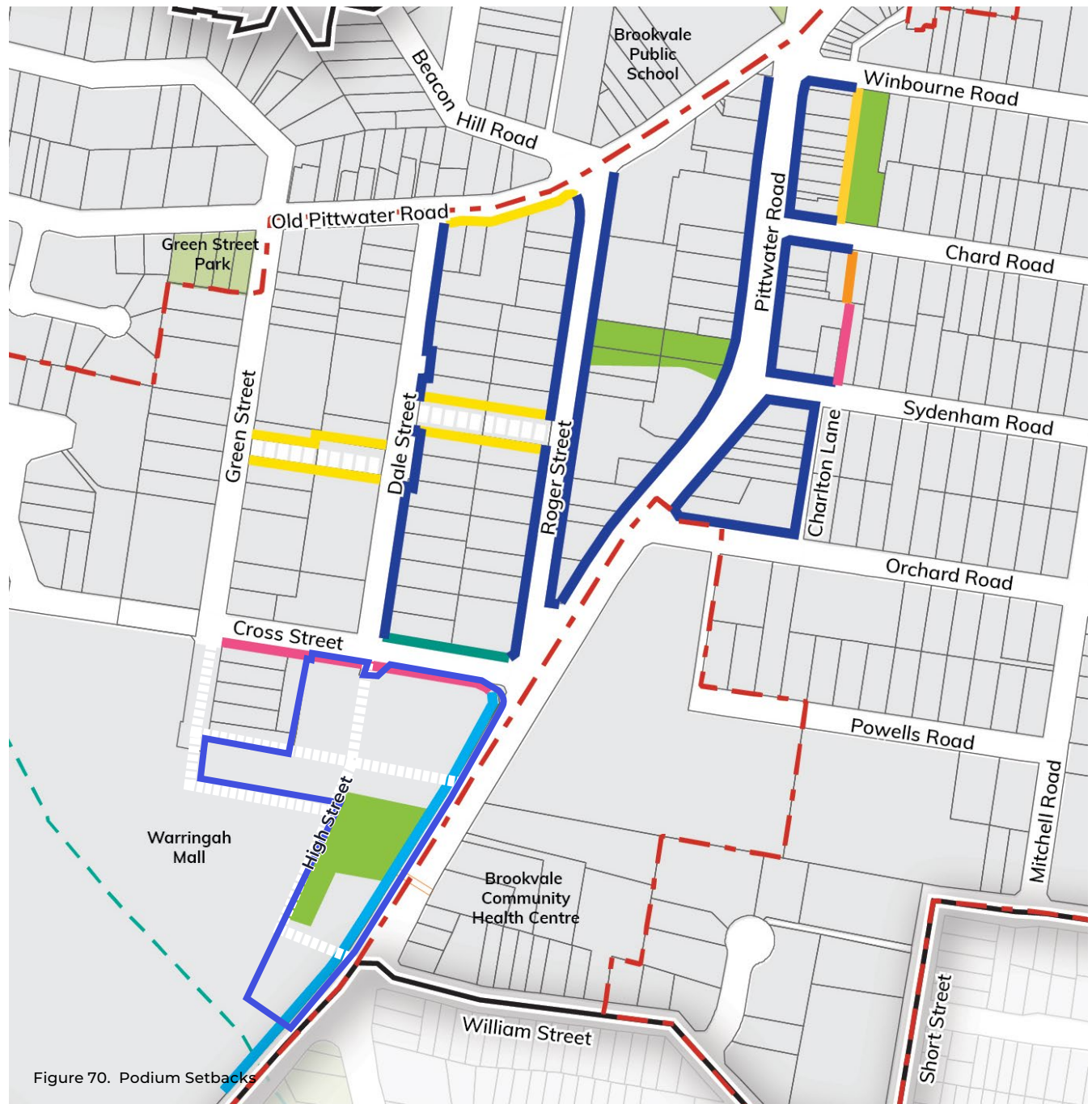


Figure 70. Podium Setbacks

9.5 Tower Setbacks

Tower Setbacks

- 3m tower setbacks have been provided along Roger Street, Cross Street and to the rear of properties along the eastern side of Pittwater Road to manage the interface with the industrial area.
- 6m tower setbacks have been provided along the blocks on Pittwater Road, this allows residential amenity to be away from the noise on Pittwater Road.

Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  Separate HDA SSD
-  Public Open Space
-  Proposed Open Space
-  3m
-  6m



Figure 71. Tower Setbacks

9.6 Active Frontages

Primary Active Frontages

- Primary Active Frontages along Roger Street will envision a range of working spaces, such as maker-spaces, creative enterprises, artisanal food and drink producers and small-scale retail that provides passive surveillance and have more public facing interfaces.
- Primary Active Frontages along Pittwater Road will also envision a range of creative and maker spaces but will include showrooms for vehicles and home materials and fixtures. This includes the prominent corner that interfaces with the proposed open space along Pittwater Road.
- Primary Active Frontages along the new High Street and Town Square are envisioned to include active uses like shops, cafés, or display windows to encourage street-level engagement and activation. They will also provide passive surveillance to the B-line stops and key pedestrian movement corridors.
- The proposed Primary Active Frontages are placed to encourage street-level engagement and will promote pedestrian activity.

Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  Separate HDA SSD
-  Public Open Space
-  Proposed Open Space
-  Primary Active Frontages



Figure 72. Primary Active Frontages

Secondary Active Frontages

- Secondary Active Frontages along Roger Street are for less intensive activation to allow for larger employment uses such as manufacturing spaces, showrooms and other uses that provide passive surveillance while allowing for diverse economic activity that does not require a public facing interface.
- Secondary Active Frontages along the open spaces enable the opportunity for diverse and active public facing interfaces that provide passive surveillance.
- The proposed Secondary Active Frontages along Roger Street extend toward Brookvale Primary School to provide safer walking routes for existing and future residents.

Legend

-  Investigation Area Boundary
-  Study Area Boundary
-  Separate HDA SSD
-  Public Open Space
-  Proposed Open Space
-  Secondary Active Frontages



Figure 73. Secondary Active Frontages

9.7 Parking

Podium Parking

There may be sites located south of Cross Street on the Warringah Mall site or at the southern end of Roger Street where basement parking is not feasible due to a low water table and flooding constraints. Where above ground parking is proposed, parking levels should be sleeved to allow for ground level activation and surveillance of the street avoiding blank walls along primary frontages. This condition may also help address sites that interface with existing industrial lands (western side of Roger Street) or deep blocks on the Warringah Mall site.

For some areas of Cross Street, the objective is to retain existing mature trees, particularly along the southern side of Cross Street. In these areas, parking will take up the ground floor, adjacent to the existing sloped vegetated landscape. This condition will be flexible and an active frontage will is encouraged where possible.

Legend

Residential

Commercial

Parking

Flexible (Parking)

Foot Path

Deep Soil

Carriageway

Permeable Parking Bays with Tree Blisters

Opportunity for Passive Irrigation Garden

Road Fall

Cross Street

Figure 74. Parking Section - Cross Street

Roger Street

Figure 75. Parking Section - Roger Street

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Potential for Basement Parking

Areas outside of flood risk will have the flexibility to choose basement parking or podium parking based on individual site market and development feasibility considerations. This is the case for development along the northern portions of Pittwater Road and Roger Street, where car parking can be located in the basement to allow for larger commercial or retail floorplates on the ground floor.

As shown in the Pittwater Road North parking section, Potential Scenario A to the left demonstrates a scenario where basement parking has been adopted, while Potential Scenario B to the right presents the sleeved podium parking typology. The parking condition of each development site will need to be investigated in the detailed design stage.

Pittwater Road North

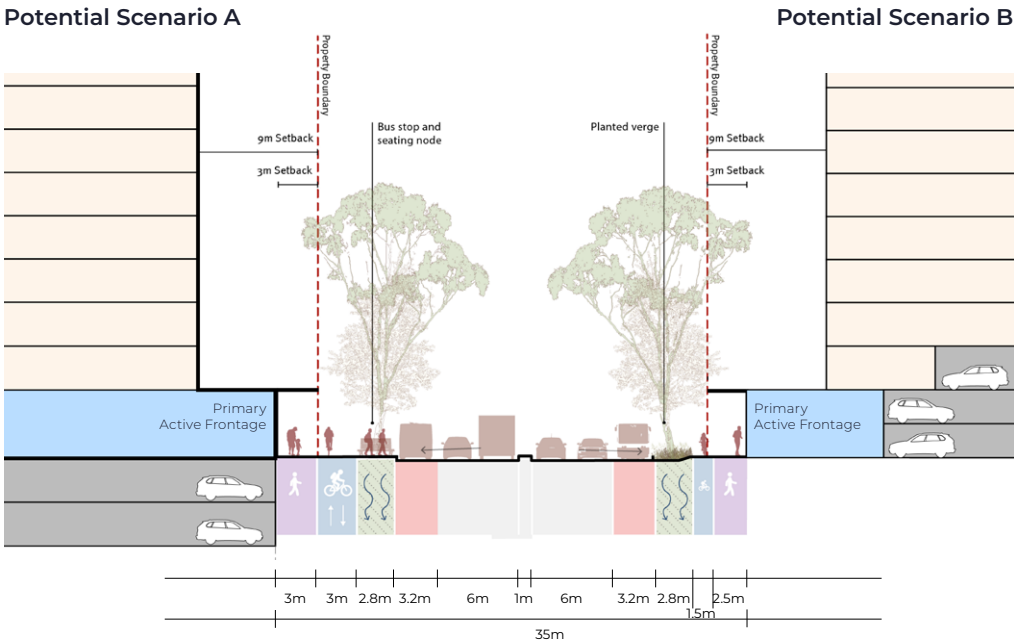


Figure 76. Parking Section - Pittwater Road North

10. Yield Estimate

This yield summary provides an overview of the number of dwellings and related population increase. A further breakdown of yield can be found on the following pages.



10.1 Assumptions Summary

Built Form		
Minimum amalgamated lot size		900 m ²
Minimum floor-to-floor heights	Commercial / retail ground floor	5m
	Residential	3.2m
Lift overrun, rooftop plant and structures associated with rooftop communal open space		4m
Gross Building Area (GBA) to Gross Floor Area (GFA) efficiencies have been calculated based on high-level waste servicing testing.		

Car Parking Rates		
Use	Rate / Dwelling	Source
1 Bedroom / Studio	0.6	WDPCP (Frenchs Forest - G5)
2 Bedroom	1	
3 Bedroom	1.5	
Visitor	0.1	
Retail	4.1 spaces/100m ² GFA	WDPCP (Appendix 1)
Office	1 spaces/40m ² GFA	
Car parking is assumed to be basement parking in all sites except for Warringah Mall.		

Dwelling Mix			
Dwelling Type	Mix	Size (GFA)	Source
1 Bedroom / Studio	20%	55 m ²	Draft NB LEP
2 Bedroom	60%	75 m ²	
3 Bedroom	20%	95 m ²	
Affordable Housing			
All Sites	3% of total residential GFA		Colliers Urban Planning
Selected Sites	5% of total residential GFA to be applied through incentives under the LEP		Colliers Urban Planning

Proposed contributions framework
A revision to the Northern Beaches Section 7.12 Local Infrastructure Contributions Plan will be prepared to include Brookvale. The revision will help fund the delivery of local infrastructure required to support future development within the Town Centre. Specifically, this will establish a contribution levy to fund works and facilities that serve the future residents and workers within the precinct. The Plan will operate in addition to contributions required under the regional Housing and Productivity Contribution and any other applicable State or local contribution mechanisms.

10.2 Waste Servicing Areas

Waste Servicing Site Testing

From a waste servicing perspective, ground floor access and manoeuvring is preferred. For the purpose of master planning and based on the swept path analysis, an average of 700m² has been assumed as the area required for waste servicing manoeuvring and related storage or servicing on the ground floor.

Further detailed design will be required to inform future developments, locations of waste servicing areas are indicative only and may be considered in the basement on a site by site basis to maximise on employment floorspace on the ground floor.

Legend

	Cadastre		Employment
	Proposed lot amalgamation		Proposed Street
	Waste servicing areas		Proposed open space

- Swept paths were drawn by JMT Consulting on four sample sites which are aligned with amalgamated lots in the Master Plan. These indicate the area taken by a waste management vehicle as per the Northern Beaches Waste Management Guidelines. They are shown entering the site and taking a three point turn on the ground floor.
- For larger sites with two residential towers (Site K) the waste management area is increased to 1,000m² as an estimate only for the purposes of master planning to accommodate the amount of increased space required for storage and servicing.

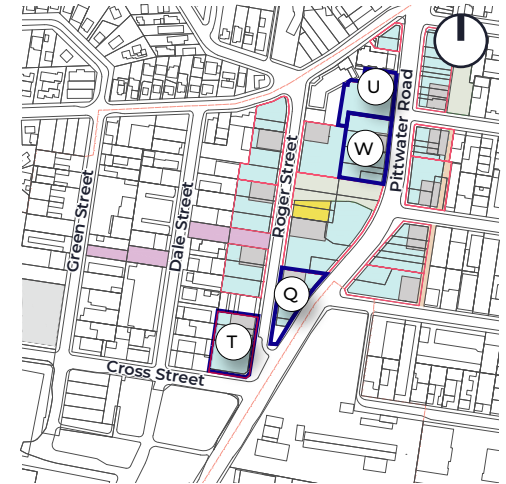


Figure 81. Key Plan

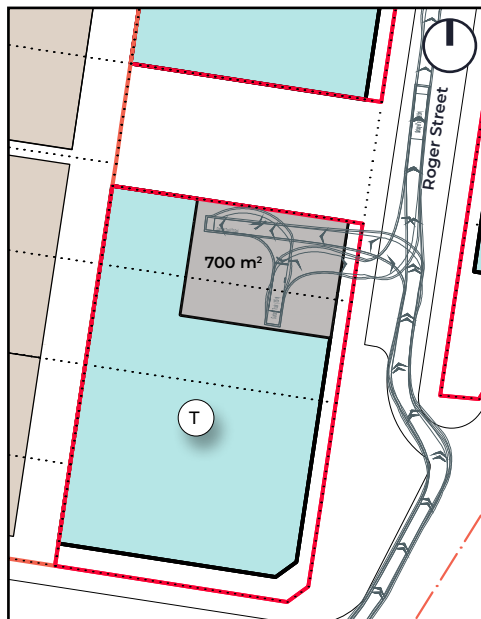


Figure 77. Site M - Roger Street

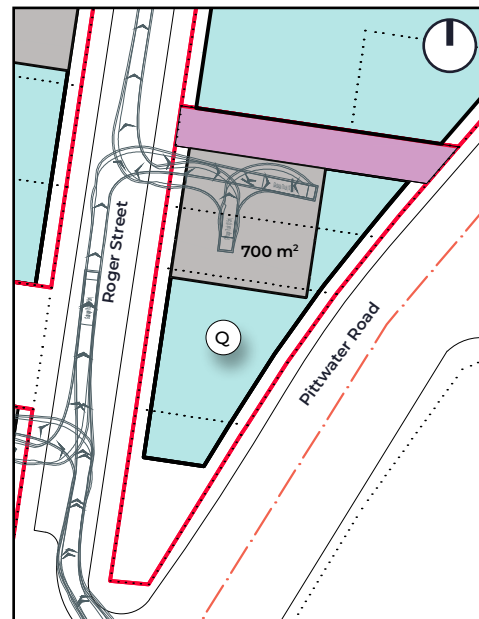


Figure 78. Site S - Roger Street

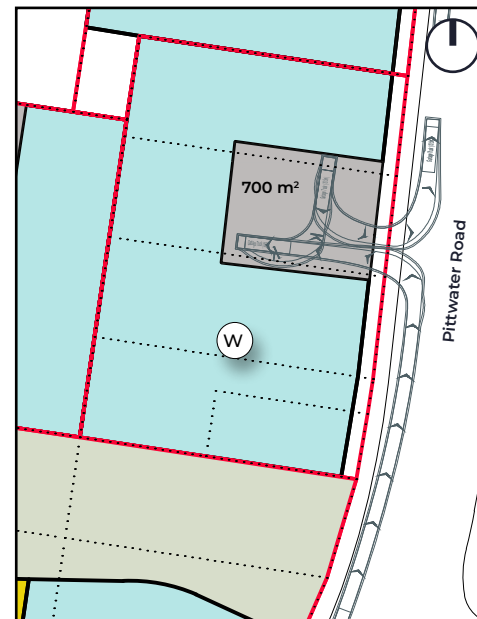


Figure 79. Site Q - Pittwater Road

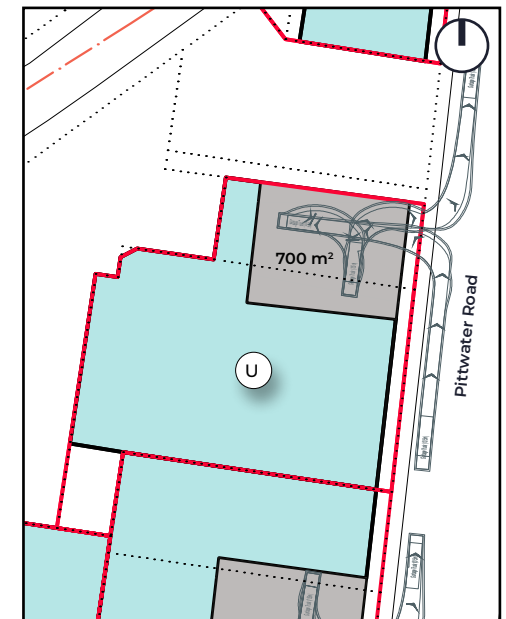


Figure 80. Site O - Pittwater Road

Waste Servicing Areas

- Non-Residential GBA to GFA efficiencies have been adjusted to reflect the assumed 700m² waste management area per site.
- Other methods of waste management and collection are to be considered for highly constrained sites, for instance:

* For Site Q, their potential for Non-Residential GFA is impacted due to the waste management taking up a significant area of the ground floor.

^ For Site Y will not be able to accommodate a waste management vehicle three-point turn within its site boundary.

Block	Non-Resi GBA	Efficiency	Non-Resi GFA	Non-Resi FSR
Category 1 - Open Space and Public Parking				
J	3,331 m ²	80%	2,665	0.69
K	6,896 m ²	85%	5,862	0.55
Sub Total	10,227 m²		8,527 m²	
Category 2 - Public Domain Widening and New Laneways				
M*	1,462 m ²	50%	731 m ²	0.38*
N	2,183 m ²	70%	1,528 m ²	0.50
O	2,765 m ²	75%	2,074 m ²	0.64
P	2,903 m ²	75%	2,177 m ²	0.64
Q	2,035 m ²	65%	1,323 m ²	0.47
R	2,851 m ²	75%	2,138 m ²	0.71
S	2,855 m ²	75%	2,141 m ²	0.70
T	3,387 m ²	80%	2,710 m ²	0.71
U	3,221 m ²	80%	2,577 m ²	0.76
V	3,206 m ²	80%	2,565 m ²	0.76
W	4,190 m ²	85%	3,562 m ²	0.80
X	3,979 m ²	80%	3,183 m ²	0.74
Y [^]	605 m ²	80%	484 m ²	0.54
Sub Total	35,642 m²		27,192 m²	

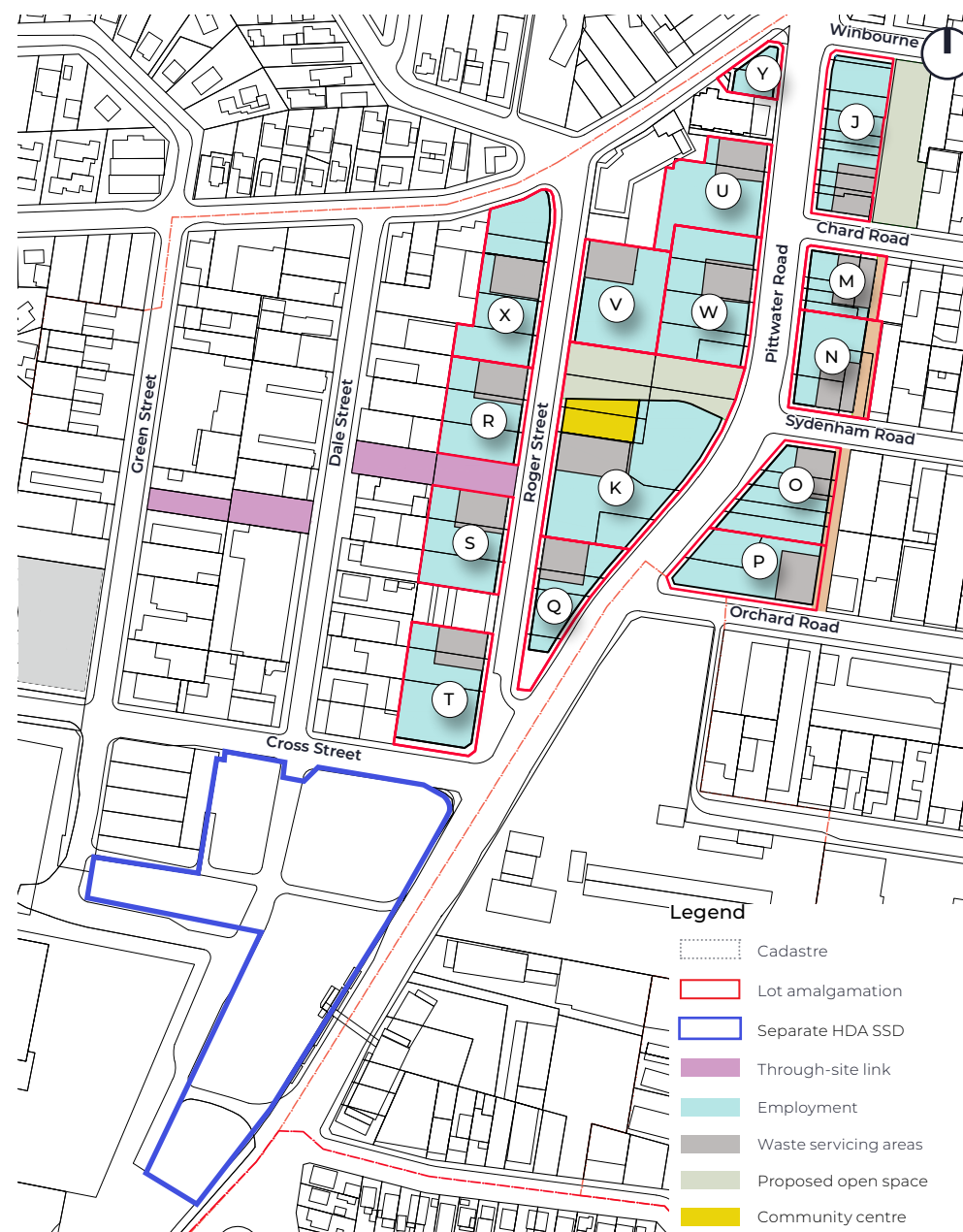


Figure 82. Ground level envelope plan with indicative waste management

3D Model

Built Form and Floor Space Ratio Approach

The built form testing provides building envelopes that reflect the desired future character for Brookvale and help inform the proposed changes to the Warringah Local Environment Plan 2011 (WLEP 2011) and the Warringah Development Control Plan 2011 (WDCP 2011).

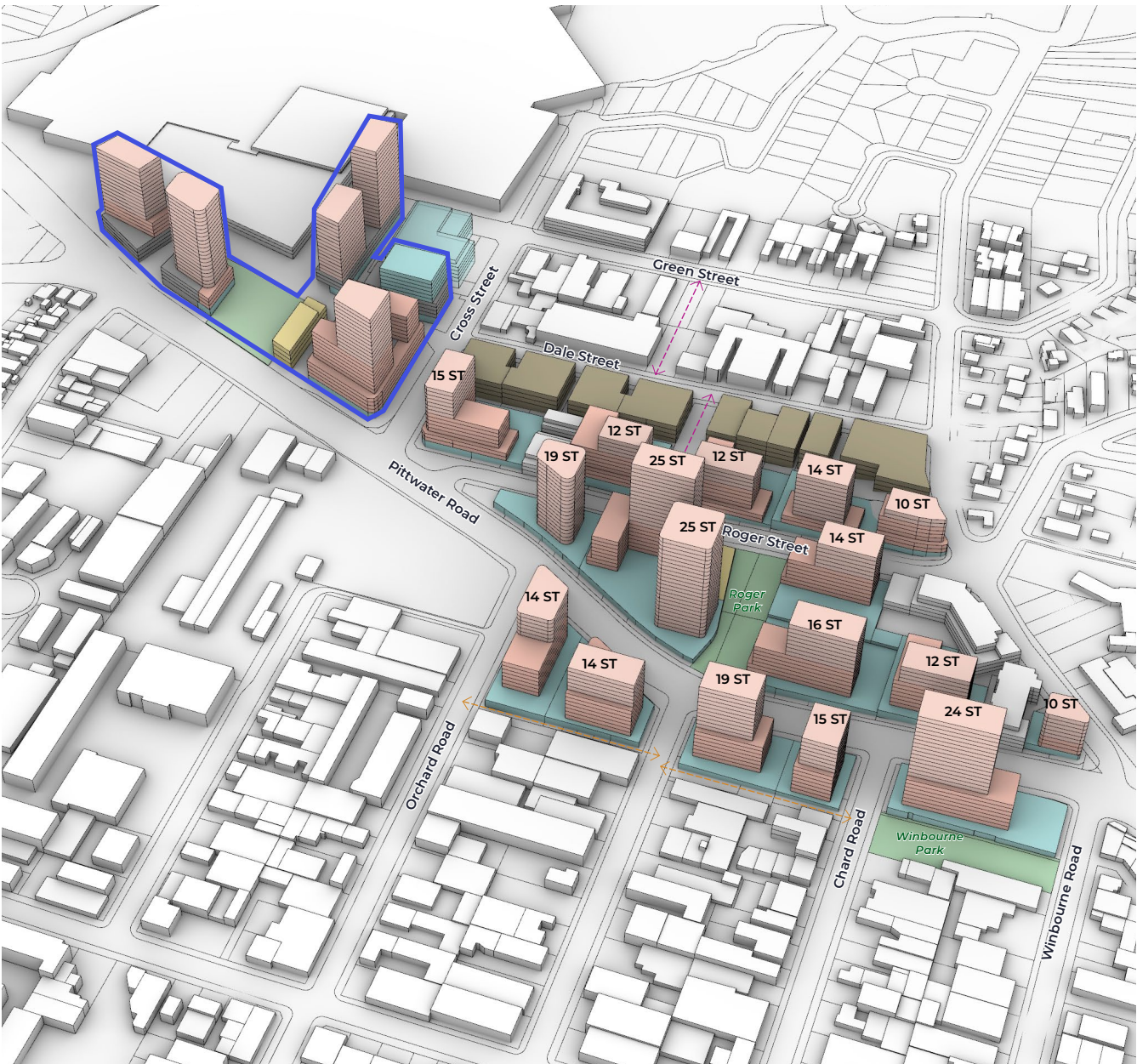
The built form approach has been informed by the design principles, height principles, proposed setbacks and street wall considerations. Solar access to proposed open spaces has been considered to inform building heights and tower locations.

To respond to the different scenarios within the Master Plan, a tiered approach to total Floor Space Ratio (FSR) has been adopted which incentivise the delivery of open space and public domain amenity:

FSR Category	Proposed Total FSR
Category 1 - Sites with Proposed Open Space or Public Parking	Up to 5.4:1
Category 2 - Sites with Public Domain Widening and New Laneways	Up to 3.8:1

Legend

- Cadastre
- Separate HDA SSD
- Employment
- Residential (Podium)
- Residential (Tower)
- Proposed Open Space
- Community centre
- Industrial



Detailed Yield Breakdown



All values have been rounded.

* Sites unable to achieve minimum 0.5:1 Non-Residential FSR due to the small size of the site, it is delivering public domain widening and laneway widening.

^ Site Y is unable to achieve 3.4:1 total FSR due to the small size of the block. It has been maintained at a total FSR of 3.3:1

Key Site	Resi GFA	Resi FSR	Non-Resi GFA	Non-Resi FSR	Total FSR	Dwellings	Public Benefits
Category 1 - Sites with Proposed Open Space or Public Parking							
J	18,047 m ²	4.7:1	2,665 m ²	0.7:1	5.4:1	210	Public domain widening = 508 m ² 75 Public parking spaces in basement
K	37,312 m ²	3.5:1	5,862 m ²	0.5:1	4.0:1	435	Open space = 3,200 m ² Community Centre = 1,000 m ² Public domain widening = 556 m ²
Warringah Mall							
L	72,840 m ²	3.0:1	13,293 m ² (includes 2,650m ² of Community Centre)	0.5:1	3.5:1	850	Open space = 5,000 m ² Community Centre = 2,650 m ² Public domain widening = 2,804 m ²
Sub Total	128,198 m²		21,819 m²			1,495	
Category 2 - Sites with Public Domain Widening and New Laneways							
M*	8,968 m ²	3.4:1	731 m ²	0.4:1*	3.8:1	78	Laneway = 239 m ² Public domain widening = 239 m ²
N	13,722 m ²	3.3:1	1,528 m ²	0.5:1	3.8:1	120	Laneway = 579 m ² Public domain widening = 292 m ²
O	13,976 m ²	3.2:1	2,074 m ²	0.6:1	3.8:1	122	Laneway = 183 m ² Public domain widening = 305 m ²
P	14,269 m ²	3.2:1	2,177 m ²	0.6:1	3.8:1	125	Laneway = 121 m ² Public domain widening = 394 m ²
Q	12,154 m ²	3.3:1	1,323 m ²	0.5:1	3.8:1	106	Public domain widening = 771 m ²
R	11,845 m ²	3.0:1	2,141 m ²	0.7:1	3.8:1	103	Public domain widening = 180 m ²
S	12,527 m ²	3.1:1	2,138 m ²	0.7:1	3.8:1	109	Public domain widening = 191 m ²
T	15,852 m ²	3.1:1	2,710 m ²	0.7:1	3.8:1	138	Public domain widening = 442 m ²
U	8,790 m ²	2.6:1	2,577 m ²	0.7:1	3.4:1	102	Public domain widening = 172 m ²
V	9,192 m ²	2.7:1	2,565 m ²	0.7:1	3.4:1	107	Public domain widening = 191 m ²
W	11,353 m ²	2.6:1	3,562 m ²	0.8:1	3.4:1	132	Public domain widening = 243 m ²
X	11,390 m ²	2.7:1	3,183 m ²	0.7:1	3.4:1	133	Public domain widening = 329 m ²
Y^	2,494 m ²	2.8:1	4,84 m ²	0.5:1	3.3:1	29	Public domain widening = 103 m ²
Sub Total	120,704 m²		27,192 m²			1,404	
Total	248,902 m²		49,012 m²			2,899	

11. Implementation

The Warringah Local Environment Plan 2011 (WLEP 2011) and the Warringah Development Control Plan 2011 (WDCP 2011) are being updated to support our vision for the Brookvale Precinct.

These documents will be updated to provide guidance for the urban renewal of Brookvale, contributing to a mixed-use strategic centre facilitating housing, jobs, services and public spaces that support the needs of the growing Northern Beaches community with the aim to contribute positively to the character and quality of life of Brookvale.

11.1 Implementation Strategy Summary

The changes to the Warringah Local Environment Plan 2011 (WLEP 2011) will include updates to land zoning, building height limits and density on each site. In addition, a precinct-specific Part will be included for the Brookvale Precinct, which include additional local provisions that facilitate a quality urban design outcome.

The Warringah Development Control Plan 2011 (WDCP 2011) changes will include further details about the new design of buildings, movement networks, environmental management and landscaping requirements. In addition, the DCP will provide guidance on key sites throughout Brookvale.

Maps outlining the intended changes to the WLEP 2011 and WDCP 2011 are provided in Appendix A.

Warringah LEP 2011 Amendments

The implementation of the Brookvale Structure Plan will require amendments to the WLEP 2011 as outlined below.

Land Use Zones

The land use zoning will be amended to reflect the intended mix of land uses proposed within the Structure Plan. Sites fronting Pittwater Road will be rezoned to MU1 Mixed Use to facilitate a diversity of land uses, such as office and business premises, retail, car showrooms, creative industries and high tech, artisan food and drink industries, light industries and shop top housing.

Amend from E4 General Industrial to E2 Commercial Centre for the 26-36 Green Street site to align with the existing uses on the site and the land zoning on the surrounding Warringah Mall site.

Additional housekeeping amendments will be implemented including rezoning to MU1 Mixed Use for the Winbourne Road Car Park and E4 General Industrial for one drainage reserves.

Reclassification of Public Land

Council owned sites within the Brookvale Precinct will be classified as operational to support their change of use. This includes the Winbourne Road Car Park and two existing drainage channels.

Additional Permitted Uses

Additional low-impact employment uses—such as business premises, office premises, health services facilities, and veterinary hospitals—will be permitted on the eastern side of Dale Street to support a smoother land use transition and minimise potential conflicts. Residential flat buildings will also be permitted within the Mixed Use zone to enable greater flexibility, particularly where developments are unable to be characterised as shop-top housing. This encourages activation at ground level through light industrial and creative uses.

Height of Building and Floor Space Ratio

Only minor amendments are proposed to Clause 4.3 Height of Buildings or Clause 4.4 Floor Space Ratio under the WLEP 2011. Instead, a new Part 9 is proposed to incentivise built form outcomes envisioned in the Brookvale Structure Plan, ensuring alignment with the desired outcomes for the Precinct.

Part 9: Brookvale Town Centre

A new part will be inserted into the WLEP 2011 providing further controls and guidance for development within the Brookvale Precinct. The controls include provisions for the following:

- Design excellence requirements for development greater than 12 meters or 3 storeys, ensuring that developments that may meet technical requirements
- Affordable housing requirements ranging from between 3% to 5%

- Incentive maximum height of building and floor space ratio requirements If development delivers adequate infrastructure such as through site links and open space areas.
- Minimum non-residential floor space ratios for development in the MU1 Mixed Use zone ensuring the long-term protection of employment-generating floor space in Brookvale

Warringah DCP 2011 Amendments

Amendments to the Warringah LEP 2011 will be supported by corresponding updates to the Warringah DCP 2011 to ensure alignment with the Brookvale Structure Plan. A site-specific section within the DCP is proposed, which will include provisions relating to the following:

- Desired future character
- Local infrastructure and public domain
- Movement network and public open space
- Land uses
- Site amalgamation
- Heritage
- Building layout, form and design
- Noise management
- Waste management
- Water management
- Traffic and parking
- Sustainability
- Green infrastructure
- Waste management
- Contamination
- Site-specific provisions (e.g. Warringah Mall).

Of note, there is an existing DCP for the Warringah Mall Site under Part G4. Amendments to the G4 DCP are also proposed.

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We acknowledge the traditional custodians of the land and pay our respects to their elders, past, present and emerging.